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STRENGHTENING QUALITY ASSURANCE IN PRIMARY HEALTH CARE IN THE REPUBLIC OF ARMENIA

QUALITY ASSURANCE TOOLKIT

YEREVAN
2008

Strengthening Quality Assurance

in Primary Health Care

in the Republic of Armenia

- - - - - - - -

Quality Assurance Toolkit

Yerevan
2008

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ACRONYMS

GoA	Government of Armenia
MCH	Maternal and Child Health
MCR	Medical Chart/Case Review
MOH	Ministry of Health
PHC	Primary Health Care
PHCR	Primary Health Care Reform project
PSF	Patient Satisfaction Feedback
QA	Quality Assurance
QI	Quality Improvement
QIB	Quality Improvement Board
RoA	Republic of Armenia
RH	Reproductive Health
SA	Self-Assessment
SHA	State Health Agency
USAID	United States Agency for International Development

Preface

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

The policy basis and mandate for improving the quality of health care in Armenia is embodied in the *Concept Paper* approved by the Government of Armenia decree of October 2002. The *Strategy of Quality Assurance in Primary Health Care* incorporated in the general "Strategy of Primary Health Care in the Republic of Armenia 2008-2013" was the next key step in establishing the Quality Assurance system in the Republic of Armenia.

There are four documents that have been prepared that describe the basic framework and which provide guidelines for improving quality of care in Armenia. These include:

- "*Strengthening Quality Assurance in Primary Health Care in the Republic of Armenia: Quality Assurance Toolkit.*" This is the current document and describes the overall strategy, content, and process for improving the quality of primary health care in Armenia.
- "*Detailed Implementation Plan to Strengthen PHC Quality Assurance in the Republic of Armenia*".
- *"Training Guide: Preparing Quality Coordinators for Marz Level"*.
- *"Training Guide: Preparing PHC Facility Representatives to Introduce QA Tools in Their Facilities"*.

Dr. Murad Kirakosyan**,** Quality of Care Advisor for the PHCR Project, and Dr. Mary Segall, Quality Assurance consultant from IntraHealth International, an EMG sub-contractor, are the two primary authors of the four key documents of the framework. At the same time, successful development of such documents requires the collaboration of many partners, particularly MoH officials, each of whom made special contributions; these are identified in the acknowledgments section.

The Primary Healthcare Reform (PHCR) project is pleased to be able to support the Government of Armenia, and the Ministry of Health (MoH) in particular, in achieving the goal of improving the quality of care. We trust that through implementing this program, services will be strengthened and health outcomes improved. Comments or questions on these materials are welcome and should be sent to info@phcr.am. The report can be found on the PHCR website at www.phcr.am.

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Section I.

STRATEGY OF PRIMARY HEALTH CARE IN THE REPUBLIC OF ARMENIA 2008-2013.

Extract of the Strategy of Quality Assurance in Primary Health Care

Approved by the RoA Government Decree 19 June 2008, protocol #24

3. Main directions of the Primary Health Care reforms for years 2008-2013.

3.1. Quality assurance in Primary Health Care

The "Concept Paper on the Improvement and Management of the Quality of Health Care provided to the RA Population" approved by the RoA Government Decree 31.10. 2002, #46, states that the effective management of the Quality of Care, as a necessary component of the healthcare system general management, is an important goal of health care reforms in Armenia.

'Quality assurance', 'quality improvement', and 'quality management' are all terms used to refer actions taken to establish, protect, promote and improve quality of health care.

Quality assurance (QA) is a set of activities aimed at monitoring and improving the quality of health care, which should include: a) identification of needs and opportunities for improvements; b) identification and implementation of interventions for improvement; and c) mechanisms to monitor processes, outputs and outcomes over time, and across sites.

Ensuring healthcare quality requires improved management and supervision of clinical services. But in order to achieve improvements, providers and patients must be engaged in QA processes and be satisfied with their results.

A successful quality assurance strategy should result in: a) increased providers' compliance with evidence-based protocols and guidelines; b) reduced number of medical errors; c) improved patients' satisfaction; d) more efficient use of healthcare resources; e) and ultimately, improved health status of the population. With this regard, quality assurance should be considered as a cyclical process, which is to be continuously followed and the results constantly reviewed in order for quality of care to improve.

Healthcare Quality may be defined as an indicator that illustrates how well the care provided in real life corresponds to the contemporary medical science and technology requirements. The objective of quality assessment is to determine how successful the health service/provider was at achieving this compliance.

In order to achieve the expected results, the quality assurance cycle should consist of the following steps, through using data for informed decision-making at each step:

- Detection and assessment of problems and gaps in health care services;
- Identification of opportunities for improvements;
- Identification and implementation of interventions to address problems and gaps;
- Analysis of whether an intervention is having the desired results, and
- Repeat the cycle to ensure continued improvements.

3.1.1. Fundamentals for Quality Assurance in Primary Health Care

The following working principles need to be applied for continued quality improvement to take place: (1) Patient focus: Involving the patient in determining quality and improving services, (2) Understanding the care as a holistic system including both the content of care as well as the process for providing care; (3) Using data to drive decision-making and develop interventions; (4) Teamwork: Involving all PHC providers at all levels of the system is important. (5) Quality assurance interventions should be implemented through Supportive Supervision.

3.1.2. Aspects and Dimensions of Quality of Care

Quality of care is a multi-faceted phenomenon. Improving health care quality requires more than the clinical competence of health care providers; it requires more than the availability of supplies and drugs. Improving quality of care requires intervention and monitoring of all aspects of health care. Improving one area without an appropriate focus on all aspects (or dimensions of quality) results in wasted resources and sub-par results.

Therefore it is important to view any effort to improve quality as a holistic system that provides continuous attention and monitoring to all of the following commonly recognized aspects of healthcare quality. A comprehensive system for quality assurance typically consists of three parts:

Structure (or inputs): - the conditions, resources and investments that are necessary to provide and maintain the health care services.

- ***Processes:*** - the series of actions and steps taken that transform the inputs to outputs and outcomes, the activities/procedures that constitute the process of health care.
- ***Outputs and outcomes:*** - the immediate or final results of the inputs and processes.

To be more specific, the building blocks or **structural inputs** include developing stands of quality in relevant areas (that are influenced by Armenian's burden of disease for clinical care) with indicators defined. **Processes** then include training providers to implement the standards of care and measurement of progress by having a quality improvement process to monitor progress. The effects are then determined by examining the impact on health status **outcomes** (# of patients whose hypertension or diabetes is controlled) and patient satisfaction. The last step is having some kind of recognition system of the performance of facilities who have met the criteria of quality provision of health care services. The objective of quality assurance is the maximum effective use of the inputs to bring about the best outputs and outcomes.

In order to assess and then improve quality of care provided, the following aspects or dimensions of healthcare quality agreed upon by many experts are as follows:

- ***Access:*** The degree to which healthcare services are unrestricted by geography, economic, social, and structural barriers.
- ***Physical Environment:*** The condition of the health care facility, including equipment , supplies, cleanliness, sanitation, comfort, accommodation for patient privacy, as well as the safety and security of the physical structure.
- ***Technical Competence:*** How well tasks carried out by health care providers and facilities adhere to the established clinical standards, and meet the expected outcomes.
- ***Responsiveness:*** The extent to which health care providers are responsive to the patients and community needs, including effective communications between patient and provider.

- ***Management:*** The adequacy of human resources, provision of supportive supervision, maintenance and administration of daily routines of health care facilities, maintenance of supplies and equipment.

Another consideration is that quality improvement interventions occur ***both externally at the national/marz/city level, and internally at the facility level.***

3.1.3. Implementation of the Quality Assurance in Primary Health Care

To ensure successful implementation, institutionalization and sustainability of quality assurance throughout the Republic of Armenia, the recommended quality assurance tools will be implemented gradually, over a period of time, conditional upon their feasibility and readiness of the Armenian PHC system to employ them. The Ministry of Health will assume leadership for implementation and ongoing renewal of QA processes in Armenia, including but not limited to ensuring the following conditions are in place or addressed as priority:

a. Defining and regular review/update of the PHC quality indicators and quality assurance tools.
b. Coordination of development and regular update of evidence-based best practice standards – job aids, protocols, guidelines - by assuring involvement of the corresponding stakeholders in that process.
c. Development of healthcare information systems: assuring availability of the unified recording and reporting sources/forms.
d. Budgetary decision-making authority at the appropriate level within the healthcare system for allocation of resources and financing to cover the implementation costs of the QA strategy.
e. Rationalization of the system for job compensation and reward in a way that quality achievements of both providers and facilities to be recognized and encouraged through employing efficacious incentives when the pre-defined quality targets are met.

The rollout of the QA process will be conducted in two phases – Phase 1 will start with the larger facilities including those practices that have at least three physicians. Phase 2 will continue the roll out the process out nationwide and will involve the smaller PHC sites with less than three physicians.

3.1.4. Monitoring and Measuring Quality in Primary Health Care

The implementation of PHC QA strategy requires a system of monitoring and evaluation, which encloses the following components: quality indicators and standards, sources for gathering clinical data, methods of monitoring, and mechanisms for reporting and feedback.

The Ministry of Health outlines its priorities in quality improvement by identifying selected indicators and tools to monitor QA processes in primary health care. The monitoring strategy for this initiative should be based on existing information systems so that it does not duplicate information collection. Most of the needed information is already available in the facility's health information system or through regular medical recording and reporting forms.

Added to this strategy, the Ministry of Health will define a list of recommended quality assurance tools, as well as the QA implementation plan, which will be admitted and applied according to the established order.

Section II.

QUALITY IMPROVEMENT BOARDS FOR PRIMARY HEALTH CARE FACILITIES

Proposed Regulation

1. General Provisions

1.1 The Quality Improvement Board (QIB) (hereinafter referred to as "Board") is a collective consulting and decision-making body formed at different levels of the Primary Healthcare (PHC) system. The goal of which is to assure the quality of provided PHC services.

1.2 The Quality Improvement Boards should be formed at different levels of the systems.

- ***Central MOH****:* This policy-level Board will oversee and manage the development and implementation of quality assurance. This QIB should have the authority to make decisions and implement them. It is important that participation on this Board include all departments of the Ministry involved, including the State Health Agency (SHA), in addition to representation from the relevant professional associations.
- ***Marz Level (attached to the marz HSSDs)****:* Marz-level Boards will coordinate, assure and support quality assurance processes at PHC facilities within the marz. Marz QIBs will monitor and support QIBs formed in PHC facilities.
- ***Large PHC facilities (3 or more physicians)****:* PHC facilities with 3 or more PHC physicians - polyclinics, ambulatories, health centers, Family Medicine (FM) group practices, including their referral network(s), can form a QIB within the facility that includes facility physicians and staff.
- ***Smaller PHC facilities (1-2 physicians):*** PHC facilities with fewer than 3 physicians may form an "umbrella" Board between 3-4 PHC practices that are located geographically close together. This may refer to autonomous FM practices, ambulatories or health centers, which are not included under the competence of any polyclinic.
  As an alternative option, marz level QIBs may assume the role of directly assuring QA functions for smaller PHC facilities, relying on the marz head/senior specialists or Quality Coordinators. Dependent on the number of smaller PHC facilities in each Marz, more than one QIB may be created at the Marz level: sub-regional QIBs can be created in the bigger Marzes.

1.3 The Chairman of the larger PHC facility Board is ex officio Director or Deputy Director of the given PHC facility.

1.4 The Chairman of an "umbrella" Board for the group of smaller PHC sites is assigned by its member facilities for the agreed certain period of time (recommended - no less than 6 months) and upon the principle of further rotation.

1.5 Functioning of the Quality Improvement Boards is funded in accordance with the MOH-established procedure.

2. Status and Functions of the Board

2.1 The Board makes decisions and presents suggestions regarding the activities of PHC facility (or group of facilities) operating under its competence, aimed at improving the quality and efficiency of provided PHC services.

2.2 With this purpose the Board fulfils the following functions:

2.2.1 provides information, counselling and, if necessary, training in the facility (or group of facilities) as related to implementation of the new national standards, directives and instructions about quality of care;

2.2.2 supervises, conducts monitoring and assesses the quality of PHC services provided in the facility (or group of facilities);

2.2.3 requires, receives and analyzes the results of data collected through the monitoring process in order to make decisions from collected data;

2.2.4 based on the quality monitoring and assessment develops internal instructions, procedures and protocols aimed at improving the quality of PHC services;

2.2.5 suggests/develops technological changes aimed at improving PHC services and coordinates their introduction;

2.2.6 based on the identified quality improvement needs, plans and initiates measures for professional development of the medical staff;

2.2.7 coordinates the activities of analysis, prevention and elimination of medical errors observed in facility (or group of facilities);

2.2.8 in accordance with the defined order, organizes, coordinates and supports at the PHC facility (or group of facilities) the monitoring of pre-defined quality indicators, self-assessment process, medical chart/case review, direct observations of providers and patient satisfaction interviews;

2.2.9 regularly summarizes results of the above-mentioned quality monitoring activities and accordingly develops or updates the action plan to respond to the identified performance gaps to support quality improvement *(Section III: Summary Report & Section VIII: Supportive Supervision Action Plan for Quality Assurance);* assures follow-up evaluation of effectiveness of the quality interventions:

2.2.10 on quarterly basis presents report on medical chart/case review *(Section V)* to the Healthcare Department of Marzpetaran/ Yerevan Municipality;

2.2.11 annually, until January 31st following the reporting year presents an annual report on healthcare quality in PHC facility (group of facilities) *(Section III)* to the Healthcare Department of Marzpetaran/Yerevan Municipality;

2.2.12 having the authorization of Healthcare Department of Marzpetaran/Yerevan Municipality may realize temporary or permanent additional functions aimed at improving the clinical activities of PHC facility (group of facilities).

2.3 The administration of PHC facility (group of facilities) provides thorough assistance to the Board ensuring the accessibility of necessary information and favorable conditions for its efficient operation.

3. Structure of the Board

3.1 The recommended number of the Board members is usually from 3 to 9 persons. The membership number for each particular Board is defined by the given PHC facility (or group of facilities) based on the scope of work for the Board.

3.2 It is advisable that key stakeholders interested and responsible to assuring quality of PHC services - PHC physicians, mid-level providers, head nurse, managers/supervisors would be represented in the Board. Community representative(s) may be involved in the Board as permanent or guest members.

- Community representatives have an important role to play in terms of providing feedback on such aspects of quality of care as responsiveness/interpersonal relationship/respect between provider and patient, access of care, management and physical environment. Community representatives do not feel equipped in comment about technical competence of healthcare providers.

3.3 The Board members are selected by the healthcare personnel of PHC facility (or group of facilities) during a general meeting convened for this purpose, by means of closed voting, by a simple majority of votes of all individuals present at meeting. At least 2/3 of the healthcare staff should be present at the Board foundation meeting.

3.4 The list of Board members is approved by the PHC facility director (for the "umbrella" Boards – by Marzpetaran /Yerevan city Healthcare Department).

3.5 Membership on the Board may be terminated both by the initiative of the Board, or by a request from the Board member, and also upon their mutual agreement. Insufficient participation of the Board member in the activities of the Board may serve as basis for the initiative to terminate the membership.

3.6 The membership of the Board may change on the rotation principle in case the Board foundation meeting has made a corresponding decision.

3.7 The Chairman of the Board assigns the Board Secretary who prepares the protocols and minutes of the meetings.

4. Board meetings

4.1 The activities of the Board are fulfilled through its meetings.

4.2 The Board meetings are invited on a regular/planned basis at least once per month according to the timetable defined by the Board.

4.3 A special meeting of the Board may be invited by the initiative of the Board Chairman as well as upon the request of 1/3 of the Board members.

4.4 The number of members required to be present for a quorum is at least 2/3 of the Board members. Invited individuals may also participate at the Board meetings.

4.5 The Chairman of the Board leads the Board meeting. If the Chairman is absent, a board member is authorized by the Chairman to lead the Board.

4.6 Each member of the Board has the right for one vote. It is not allowed to transfer a vote (voting right) to another person.

4.7 Decisions of the Board are made by a simple majority of votes of Board members present at the meeting. In case of an equal distribution of votes (a tie) the vote of the Board Chairman is decisive.

4.8 Protocols/Agenda of Board meetings are made. The Board meeting protocols usually include:

- 4.8.1 Date and place of the meeting
- 4.8.2 Members present at the meeting
- 4.8.3 Meeting agenda
- 4.8.4 Summaries of the speeches given during the meeting
- 4.8.5 Issues raised for discussion and results of the discussions
- 4.8.6 Decisions made during the meeting
- 4.8.7 The protocol is being signed by the members of the Board participating at the meeting.

4.9 The protocol of the previous meeting and the deliverable of the decisions made are being reviewed at the beginning of each Board meeting and corresponding assignments are being issued.

4.10 The medical personnel of PHC facility (or group of facilities) is being informed about the decisions of the meeting.

4.11 The enforcement of the decisions made by the Board is obligatory for the personnel of PHC facility (or group of facilities) under its authority. Depending on the nature of the decisions made by the Board, the Chairman of the Board may present them for the approval of the Healthcare Department of Marzpetaran/ Yerevan Municipality.

5. Roles and Responsibilities of Chairman of the Board

5.1 The Chairman of the Board:

5.1.1 represents the Board

5.1.2 organizes activities of the Boar

5.1.3 invites Board meetings and chairs them

5.1.4 organizes the preparation of Board meeting protocols

5.1.5 signs the Board meeting decisions/protocols

5.2 In case of the absence of the Board Chairman one of the Board members realizes the duties of the latter upon the decision of the Board Chairman.

6. Changes in Board Regulation

6.1 Providing additional authorities to the Board (Point 2.2.12) does not result in making changes in the present regulation; however it can be attached to the present regulation in form of an Annex.

Template: Guide to Facilitate Quality Improvement Board meetings

Name and Type of PHC facility	
Date of the Board meeting	**# of Protocol of the meeting**
Chairperson of the Q`uality Improvement Board ***(name & title)***	
Board members present at meeting ***(list)***	
Invited participants (if any)	

#	**Major areas of Discussion** ***(process, results)***	**Identified Issues / Problems**	**Key Discussion Points**	**Decisions Made**
1.	Monitoring facility and marz level achievement of targets related to key quality indicators: • Immunization coverage of children at age of 24 months • Screening for Anemia in children at age 1 year • Regular fundoscopic(eye) exam in patients diagnosed with diabetes Type II. • Regular ECG monitoring in patients with diagnosed Hyperten-sion and Coronary Heart Disease (CHD). • Blood cholesterol control in patients with (CHD. • Early detection and registration of pregnant women for antenatal care.			

See cont. on the next page

#	Major areas of Discussion *(process, results)*	Identified Issues / Problems	Key Discussion Points	Decisions Made
2.	Management of Common PHC Diseases (chart/case reviews)			
3.	Internal Facility Self-Assessment (checklist)			
4.	Patient satisfaction, community relations			
5.	Current stage review of the action plan (achievements, issues…)			
6.	Other (various)			
Signatures		**Chairperson**	**Board members**	

Section III.

QUALITY PERFORMANCE INDICATOR GUIDE to Achieve Quality of Care in PHC Facilities

Round One: Quality of Care Performance Indicators

Healthcare of Children under 18 years of age

#	Subject of monitoring	Recommended Indicator / Measure	Method of Evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Responsible(s)
1	**Full immunization coverage of children at age 24 months, according to the National immunization calendar.**	Immunization coverage of children at age of 24 months during the recording period according to mandatory vaccinations defined by national immunization calendar. *(% is calculated out of the total number of registered children of the same age)* **Value: >60%**	Statistical analysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, registration forms, encounter forms, annual reports …	PHC facility: FAP, Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	FAP→ Ambulatory/ HC / FP office in PC →(-//>) Policlinic → Marz health care department; San-epid (?) - - - - - - - Autonomous FM practices → Marz health dept	Quality Improvement Boards (QIB)[1] 1. In polyclinics - department heads and/or deputy director in charge of medicine. 2.In FAPs -Ambulatories & HCs – Facility Directors. ---------- In Marzes & Yerevan – marz/city health care department (HSSD).
2	**Screening for Anemia in children at age 1 year**	Percentage of children who turned 1 year old during the reporting period who have a record of general blood exam (including Hemoglobin) results. *(% is calculated out of the total number of registered children of the same age)* ***Value: > 80%***	Statistical analysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, encounter forms, report forms …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	Ambulatory/ HC / FP office in PC →(-//>) Polyclinic → Marz HD; Autonomous FM practices → Marz	QIBs: 1. In Ambulatories & HCs: Facility Directors. 2. In polyclinics - department heads and/or deputy director in charge of medicine - - - - - - - - - - In Marzes & Yerevan – HSSDs

[1] Please see the *Section II.* "Quality Improvement Board for PHC facilities"

Healthcare of Adults (age 18 and over)

#	Subject of monitoring	Recommended Indicator / Measure	Method of Evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Responsible(s)
3	**Regular fundoscopic (eye) exam in patients diagnosed with diabetes mellitus Type II.**	Percentage of patients with diabetes mellitus Type II who have a record of at least 1 eye fundoscopic exam performed during the previous 12 months. *(% is calculated out of the total number of all registered diabetic mellitus Type II patients).* ***Value*: > 80%**	Statistical analysis (through MIDAS-2); Random checks.	Medical record: medical charts, encounter forms, report forms …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	Ambulatory / HC / FP office in PC → (-⇏) Policlinic → Marz health care department; - - - - - - - Autonomous FM practices → Marz health care department	QIBs: 1.In Ambulatories & HCs – facility Directors. 2. In polyclinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs
4	**Regular ECG monitoring in patients with diagnosed Hypertension.**	Percentage of patients with hypertension who have a record of at least 1 ECG performed within the previous 12 months *(% is calculated out of the total number of all registered Hypertensive patients).* **Value: > 80%**	Statistical analysis (through MIDAS-2); Random checks.	Medical record: medical charts, encounter forms, report forms …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	Ambulatory / HC / FP office in PC → (-⇏) Policlinic → Marz health care department; Autonomous FM practices → Marz health care department	QIB: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

#	Subject of monitoring	Recommended Indicator / Measure	Method of Evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Responsible(s)
5	**Regular ECG monitoring in patients with diagnosed Coronary Heart Disease (CHD).**	Percentage of patients with CHD who have a record of at least 1 ECG performed within the previous 12 months *(% is calculated out of the total number of all registered CHD patients).* **Value: > 80%**	Statistical analysis (through MIDAS-2); Random checks.	Medical record: medical charts, encounter forms, report forms …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	Ambulatory / HC / FP office in PC → (-//>) Policlinic → Marz health care department; Autonomous FM practices → Marz health care department	QIB: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs
6	**Blood cholesterol control in patients with Coronary Heart Disease (CHD).**	Percentage of patients with CHD who have medical records of at least one blood cholesterol test performed within the reporting period of last 12 months. *(% is calculated out of the total number of all registered CHD patients)* ***Value:* > 50%**	Statistical analysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, encounter forms, report forms …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	Ambulatory / HC / FP office in PC → (-//>) Policlinic → Marz health care department; - - - - - - - Autonomous FM practices → Marz health care department	QIBs: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

#	Subject of monitoring	Recommended Indicator / Measure	Method of Evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Responsible(s)
7	**Early detection and registration of pregnant women for antenatal care.**	Those pregnant women who are assessed, registered and enrolled for antenatal care in the first trimester (up to 12 weeks). *(% is calculated of pregnant women up to 12 week pregnancy out of the total number of pregnant women during the reporting period)* **Value: >80%**	Statistical analysis (incl. through MIDAS-2); Random checks.	Medical record forms –charts for pregnancy monitoring, registration forms, encounter forms, annual reports …	PHC facility: FAP, Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Annually *(see page 17)*	FAP→ Ambulatory/ HC / FP office in PC →(-//>) Policlinic → Marz health care department; - - - - - - - Autonomous FM practices → Marz health care department	QIBs: 1.In FAPs -Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

Round Two: Quality of Care Performance Indicators								
#	**Subject of monitoring**	**Recommended Indicator / Measure**	**Method of evaluation**	**Source of information**	**Location**	**Reporting frequency**	**Reporting pathway**	**Respon-sible(s)**
8	Patient satisfaction with quality of PHC services.	Percentage of patients who are satisfied with service, out of the total number of responding patients. ***Value:*** *Higher=better*	Exit survey for patients. Suggestion boxes[2]	Patient satisfac-tion assessment tools [2]	PHC faci-lity: FAP, Am-bulatory, Policlinic, Autono-mous FM practices (solo or group)	Annually	No reporting out of facility is required: results are used intra-organizatio-nally.	Quality Improve-ment Boards: 1.In FAPs -Ambu-latories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medi-cine / expertise. - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs
9	Self-Assessment of commonly recognized quality dimensions within the facility	Access, Physical Environment, Respon-siveness, Technical Competency and Management dimensions of quality of care. ***Measure:*** *Internal (self-) assess-ment scores (both Total and by dimensions)* *Higher=better*	Facility/provider internal (self-) assessment [3]	Internal (self-) assessment tool [3]	PHC faci-lity: FAP, Am-bulatory, Policlinic, Autono-mous FM practices (solo or group)	Quarterly	No reporting out of facility is required: results are used intra-organizatio-nally.	Quality Improve-ment Boards: 1.In FAPs -Ambu-latories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medi-cine / expertise. - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

[2] Please see *Section VII* "Patient Satisfaction Feedback in PHC facilities"

[3] Please see *Section IV* "PHC Facility/Provider Internal (self) assessment"

#	Subject of monitoring	Recommended Indicator / Measure	Method of evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Respon-sible(s)
10	Clinical management of the most common PHC conditions/diseases, e.g.: *In adults:* 1.1. Hypertension, 1.2. CHD/Angina, 1.3. Diabetes type 2 *In children:* 1.4. Fever 1.5. Convulsive syndrome 1.6. Acute Upper Respiratory Tract Infections 1.7. Acute Otitis media 1.8. Tonsillitis 1.9. Pneumonia 1.10. Acute childhood diarrhea 1.11. Anemia	Adherence to the EBM standards (Job Aids, guidelines, protocols, other algorithms) for the given condition/disease. *% of complete adherences [4] out of the number of all reviewed medical records/charts.* ***Value:** Higher=better*	Case management review (conducted by supervisor or peer, trough medical record review) [5]	Medical record forms – patient charts, encounter forms, chart review Forms [6] …	PHC facility: Ambulatory, Policlinic, Autonomous FM practices (solo or group)	Quarterly (+ Annual summary report - *see page 17)*	Ambulatory/Health Center(HC)/ FP office in PC → (-⇏) Policlinic → Marz health care department; - - - - - - - Autonomous FM practices → Marz health care department	Quality Improvement Boards: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medicine / expertise. - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

[4] Please see the *Secgtion V*. "Medical chart/case review in PHC Facilities", page 38, point 9.

[5] Please see the *Section V*. "Medical chart/case review".

[6] Please see the *Section V*. "Medical chart/case review", page 39.

Round three: (To be confirmed) Prospective Quality of Care Performance Indicators (conditional on the preparedness of the Armenian PHC system to implement and monitor)

	Subject of monitoring	Recommended Indicator / Measure	Method of evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Respon-sible(s)
11	Effectiveness of blood pressure control in patients with diagnosed Hypertension.	Percentage of adult Hypertensive patients in whom the most recent (within the reporting period) blood pressure is <140/90 mm/Hg. *(% is calculated out of the total number of all Registered Hypertensive patients)* ***Value:*** *Higher=better*	Statistical ana-lysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, encounter forms, report forms …	PHC faci-lity: Ambulato-ry, Policli-nic, Auto-nomous FM practi-ces (solo or group)	Semi-annually	Ambulatory/ HC / FP office in PC → (-//>) Policlinic → Marz health care depart-ment; - - - - - - - Autonomous FM practices → Marz health care depart-ment	Quality Improve-ment Boards: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medi-cine / expertise. - - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs
12	Effectiveness of blood glucose control in patients with diagnosed Type 2 Diabetes Mellitus.	Percentage of adult Type 2 Diabetic patients in whom the most recent (within the reporting period) glycosilated hemoglobin (HbA1c) level is <7.0%.*(% is calculated out of the total number of all registered Type 2 Diabetic patients).* ***Value:*** *Higher=better*	Statistical ana-lysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, encounter forms, report forms …	PHC faci-lity: Ambulato-ry, Policli-nic, Auto-nomous FM practi-ces (solo or group)	Semi-annually	Ambulatory/H ealth Cen-ter(HC)/ FP office in PC → (-//>) Policli-nic → Marz health care department; - - - - - - - Autonomous FM practices → Marz health care depart-ment	Quality Imp-rovement Boards 5: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of me-dicine / expertise. - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

	Subject of monitoring	Recommended Indicator / Measure	Method of evaluation	Source of information	Location	Reporting frequency	Reporting pathway	Respon-sible(s)
13	Blood cholesterol control in patients with diagnosed Type 2 Diabetes Mellitus.	Percentage of patients with Type 2 Diabetes who have medical records of at least one blood cholesterol test performed within the reporting period of last 12 months. *(% is calculated out of the total number of all Registered Type 2 Diabetic patients)* ***Value:*** *Higher=better*	Statistical ana-lysis (incl. through MIDAS-2); Random checks.	Medical record forms –patient charts, encounter forms, report forms …	PHC faci-lity: Ambulato-ry, Policli-nic, Auto-nomous FM practi-ces (solo or group)	Annually	Ambulatory / HC / FP office in PC → (-//>) Policlinic → Marz health care depart-ment; - - - - - - - Autonomous FM practices → Marz health care depart-ment	Quality Improve-ment Boards: 1.In Ambulatories & HCs – facility Directors. 2. In policlinics - departments' heads and/or deputy director in charge of medi-cine / expertise. - - - - - - - - - - In Marzes & Yerevan – marz/city HSSDs

SUMMARY REPORT
of Indicators Assessing Quality Performance of PHC Facilities

Reporting period: ***From*** __ / __ / _____ ***To*** __ / __ / _____
PHC facility name _____

<table>
<tr><th>#</th><th>Quality indicator</th><th>Standard</th><th>Annual result</th></tr>
<tr><td>1.</td><td>Full immunization coverage of children of the age 24 months</td><td>Percentage of children at age 24 months who fully completed the immunizations in accordance with the National Plan during the reporting period of last 12 months. (Benchmark:60% and>)</td><td>___ %</td></tr>
<tr><td>2.</td><td>Screening for anemia in children</td><td>Percentage of children of the age 12 months who have a record of performed general blood test (including Hb test) during the reporting period of last 12 months. (Benchmark:80% and>)</td><td>___ %</td></tr>
<tr><td>3.</td><td>Regular eye fundoscopy control in patients with diagnosed Type 2 Diabetes Mellitus.</td><td>% of patients with Type 2 Diabetes who have medical record of at least 1 eye fundoscopy exam performed within the reporting period of last 12 months.(Benchmark:80% and>)</td><td>___ %</td></tr>
<tr><td>4.</td><td>Regular ECG-control in patients with diagnosed Hypertension.</td><td>% of patients with Hypertension who have medical records of at least 2 ECG tests performed within the reporting period of last 12 months. (Benchmark: 80% and>)</td><td>___ %</td></tr>
<tr><td>5.</td><td>Regular ECG-control in patients with diagnosed Coronary Heart Disease</td><td>% of patients with CHD who have medical records of at least 2 ECG tests performed within the reporting period of last 12 months. (Benchmark: 80% and>)</td><td>___ %</td></tr>
<tr><td>6.</td><td>Blood cholesterol control in patients with Coronary Heart Disease</td><td>% of patients with CHD who have medical record of at least 1 blood cholesterol test performed within the reporting period of last 12 months. (Benchmark: 50% and>)</td><td>___ %</td></tr>
<tr><td>7.</td><td>Early detection and enrollment of pregnant women for antenatal care.</td><td>% of pregnant women enrolled for antenatal care in the first trimester (12 weeks) of pregnancy, out of the number of all pregnant women registered during the reporting period of last 12 months. (Benchmark:80% and>)</td><td>___ %</td></tr>
<tr><td rowspan="5">8.</td><td rowspan="5">Safe & rational management of the most common PHC-sensitive conditions / diseases - as a “tracer” for quality of care.</td><td>TOTAL # of reviewed medical records/cases</td><td></td></tr>
<tr><td>“QUALITY INDEX” of good quality Medical Records/Charts: 75% and ></td><td colspan="2">Number of reviewed Charts by QUALITY INDEX
< 55% | 55–74% | 75% ></td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td rowspan="2">Adherence of the reviewed records/cases to the EBM standards</td><td colspan="2">Number of inconsistencies
DIAGNOSTIC | TREATMENT | PREVENTIVE | OTHER</td></tr>
<tr><td></td><td></td></tr>
</table>

Reporter _____ (position and name)

_____ (signature) _____ (date)

See cont. on the next page

Prospective indicators that may be employed over a period of time, conditional upon the readiness of the Armenian PHC system to implement and provide monitoring of them.[7]			
#	**Quality indicator**	**Standard**	**Annual result**
1.	Effectiveness of blood pressure control in patients with diagnosed Hypertension.	Percentage of adult Hypertensive patients in whom the most recent (within the reporting period) blood pressure is <140/90 mm/Hg. ***Benchmark**: Higher=better*	___ %
2.	Effectiveness of blood glucose control in patients with diagnosed Type 2 Diabetes Mellitus.	Percentage of adult Type 2 Diabetic patients in whom the most recent (within the reporting period) glycosilated hemoglobin (HbA1c) level is <7.0%. ***Benchmark**: Higher=better*	___ %
3.	Blood cholesterol control in patients with diagnosed Type 2 Diabetes Mellitus.	Percentage of patients with Type 2 Diabetes who have medical records of at least one blood cholesterol test performed within the reporting period of last 12 months. ***Benchmark**: Higher=better*	___ %

[7] Reporting on these indicators is to be implemented through the corresponding (additional) decision of MOH.

Section IV.

PHC FACILITY/PROVIDER INTERNAL (SELF) ASSESSMENT with Supervisor Support

Assessment of Dimensions of Quality of Care by Indicators

1. Marz _____ For year ____ *Assessment Dates: Q1*_____ *Q2*_____ *Q3*_____ *Q4* _____

2. Type of health facility: □ FAP (Feldsher/obstetrical point) □ Health Center □ Ambulatory /PHC Center
□ Policlinic □ Office of Family Doctor □ Family Medicine Group practice

3. Name of the facility: _____

4. Name of the facility responsible/director: _____ 4.1 Phone: _____

Instructions: Internal **(**self) assessment tool aids health care facility staff and their supervisor to monitor the quality of healthcare provided by the staff. This tool is designed to review and self-assess the quality of care dimensions in regard to **assuring the specific 7 pre-defined quality performance indicators** that are to be implemented at the initial stages of the QA initiative throughout PHC system in Armenia. The first round quality performance indicators that MOH will be looking at initially include immunization coverage, assessing anemia in children, managing patients with Type II diabetes mellitus, CHD and hypertension, and registering early for antenatal care (ANC). The following 5 dimensions of quality with a series of questions are posed for review of the **7 indicators** by the staff:

1. **Access** to services assesses the degree to which healthcare services are unrestricted by geographic, economic, social, and structural barriers.
    - Geographic Access: Distance and transportation to PHC facilities (incl. higher-level facilities) is a critical factor in whether a patient can access care or not. It is important to be aware of the difficulties patients face in accessing care. Doctors and specialists have the mandate to visit rural areas to provide care—often they do not, and patients suffer the consequences.
    - Financial Access: Many primary services are covered by the State budget and are intended to be free of charge to population. Yet many clients are not aware of this right.
    - Access to health information: It is important to ensure that health Information is made available to the community in a variety of ways: public media messages, patient brochures, print posters. The availability of educational materials are considered in this dimension. Having information helps the client understand know what behaviors need to be practiced to help ensure a healthy lifestyle for themselves and their families.

2. **Responsiveness** assesses two important areas:
    - Client-provider interaction: Do providers treat clients with respect? Answer questions?
    - Community-provider relations: Are providers knowledgeable and involved in their communities? Does provider seek regular feedback about services provided to clients?

3. **Physical Environment:** This dimension refers to a facility's ability to provide a safe environment for health care and assesses not only the availability and functioning of equipment and supplies in facilities but also the condition of infrastructure. Some health facilities do not have the basic infrastructure in place.

4. **Technical Competence** examines provider performance and determines if it meets established standards or not.

5. **Management** looks at supervision of facilities as well as the daily management of the PHC with regards to record keeping, service provision processes and other relevant systems.

It is recommended that the providers (typically members of the facility Quality Improvement Board (QIB) conduct this internal **(**self) assessment in partnership with staff on a quarterly basis. Based on the results of these internal assessments the QIB develops an action plan that examines the identified performance gaps and resolve any of the issues raised during the implementation of the tool *(see Section VIII "Supportive Supervision Action Plan for Quality Assurance")* and briefs the facility staff on issues and progress. No reporting of internal **(**self) assessment results outside of facility is required as this is a tool for internal improvements. This checklist and related Action Plans will, however, be available to the authorized visiting supervisors to monitor that the tool is being used and the action plans are being implemented.

Please read and answer each question carefully using the answer key as indicated in each box.

A) Tool for PHC FACILITY Internal (self-) Assessment

This tool is designed to review and self-assess **the facility level** quality of care dimensions in regard to **assuring the specific 7 pre-defined indicators**. The facility QIB members fill in this internal assessment questionnaire in partnership with staff on a quarterly basis.

- **INDICATOR #1: Full Immunization coverage of children at age 24 months, defined by national immunization calendar.**

#	***Answer key:*** **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
	ACCESS TO CARE				
1.1	Does your facility prominently display signs outside of and throughout the building that indicate the location of providing immunizations for infants and children?				
1.2	Is the schedule/calendar for providing immunizations posted and easy to see in the facility?				
1.3	Are educational materials on immunizations available for public.				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS/PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
1.4	Do providers keep records of the children up to 24 months of age (for computing coverage for immunizations)?				
1.5	Do providers explain to parent about possible side effects from the immunization(s) and what symptomatic treatment to give to infant, and under what circumstances to return to the clinic for further care?				
1.6	Do providers always explain and discuss with parent the schedule/calendar and timing of immunization and when to come for the next immunization.				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
1.7	Are basic equipment and supplies available to ensure continuous and proper provision of immunizations including: working refrigerator, needles, vaccines, cotton alcohol (according to the established normative)?				
	a. an area for counseling that is private				
	b. a working refrigerator to store vaccines				
	c. adequate supplies of vaccines				
	d. adequate supplies of needles, syringes, cotton, and alcohol to clean site for injection				
	e. a 'safety" box to safely dispose of used needles and syringes				
1.8	Do all providers have a place to wash hands between administering immunizations to a patient – soap, water				
1.9	Is facility equipped properly to assure and maintain an effective cold chain?				
1.10	Do providers maintain records of cold chain for storage of vaccines?				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
1.11	Do providers in your facility have the national immunization calendar and protocol for providing immunizations easily accessible/visible for quick reference?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATOR #1**		/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATOR #2: Screening for Anemia in Children at 1 year

#	*Answer key:* **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
	ACCESS TO CARE				
2.1	Does your facility prominently display signs outside of and throughout the building that indicate the location of providing counseling about breastfeeding and information about proper nutrition for infants and children?				
2.2	Are educational materials available for public describing the importance of breastfeeding of infants up to 6 months and how to ensure good nutrition of infants and children?				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS / PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
2.3	Do providers keep records of infants up to 1 year of age (for computing extent of anemia in infants at 12 months of age)?				
2.4	Do providers explain to women the importance of breastfeeding and effective nutritional practices to prevent occurrence of anemia in infants under 1 year of age?				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
2.5	Are basic equipment and supplies available to enable facility to perform a general blood examination including hemoglobin (centrifuge, alcohol, cotton, XXX, log book to record results) of children?				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
2.6	Do providers in your facility have regulation when to conduct blood examination (including hemoglobin) of infants/children?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATOR #2**		/ ___ (%)	/ ___ (%)	/ ___(%)	/ ___(%)

➢ INDICATOR #3: REGULAR FUNDOSCOPIC (EYE) EXAMS IN PATIENTS DIAGNOSED WITH DIABETES MELLITUS TYPE II

#	***Answer key:*** **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
	ACCESS TO CARE				
3.1	Are educational materials available for public describing the how to manage diabetes and control blood glucose through careful monitoring and healthy life style choices including nutritional choice and exercise?				
3.2	Does your facility prominently display signs outside of and throughout the building that indicate the location of providing care to diabetic patients?				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS / PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
3.3	Do providers keep records of men and women over the age of 18 years with Type II diabetes mellitus?				
3.4	Do providers explain to the patients the importance of and how to manage Type II diabetes?				
3.5	Do providers explain about the importance of regular visits to the clinic to monitor blood glucose level?				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
3.6	Are basic equipment and supplies available for all providers to ensure adequate diagnosis and provision of chronic illness care to diabetic patients, in particular:				
	a. an area for counseling that is private				
	b. a locked storage cupboard with appropriate medicines				
	c. an examination couch				
	d. sphygmomanometer				
	e. stethoscope				
	f. weight scale				
	g. tape measure to determine Body Mass Index				
	h. place and equipment for ECG?				
	i. glucometer				
	j. ophthalmoscope				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
3.7	Do providers in your facility have the job aid for Management of Type II Diabetes Mellitus in PHC Practices, easily accessible for quick reference?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATOR #3**		/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATORS #4 #5& #6: Regular ECG and Total Cholesterol Monitoring of Patients with diagnosed Hypertension and Ischemic Disease

#	***Answer key:*** **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
	ACCESS TO CARE				
4/5.1	Are educational materials available for public describing how to manage hypertension and CHD through careful monitoring and healthy life style choices including nutritional choice and exercise?				
4/5.2	Does your facility prominently display signs outside and throughout the building that indicate the location of chronic illness care?				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS / PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
4/5.3	Do providers keep records of men and women over the age of 18 years with hypertension and CHD?				
4/5.4	Do providers explain to patients the importance of and how to manage hypertension and CHD?				
4/5.5	Do providers explain about the importance of regular visits to the clinic to monitor blood pressure?				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
4/5.6	Are basic equipment and supplies available for all providers to ensure adequate diagnosis and provision of chronic illness care to hypertension and CHD patients, in particular:				
	a. an area for counseling that is private				
	b. a locked storage cupboard with appropriate medicines				
	c. an examination couch				
	d. sphygmomanometer				
	e. stethoscope				
	f. weight scale				
	g. tape measure to determine Body Mass Index				
	h. place and equipment for ECG?				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
4/5.7	Do providers in your facility have Job Aids for management of Hypertension and Ischemic Heart Disease in primary care, easily accessible for quick reference?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATOR #4, 5 &6**		/ ___ (%)	/ ___ (%)	/ ___(%)	/ ___(%)

➢ INDICATOR #7: Early detection and registration in first 12 weeks of pregnancy and coverage of pregnant women for antenatal care.

#	***Answer key:*** **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
	ACCESS TO CARE				
6.1	Is the schedule of antenatal care visits posted and easy to see in the facility?				
6.2	Are educational materials available for public describing the importance of antenatal care and getting registered in the first trimester?				
6.3	Does your facility prominently display signs outside of and throughout the building that indicate the location of providing antenatal care?				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS / PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
6.4	Do providers keep records of women of reproductive age?				
6.5	Do providers explain to women of reproductive age how to know when she might be pregnant and the importance of seeking antenatal care early in pregnancy?				
6.6	Do providers explain and provide a written schedule to the pregnant woman of the timing and content of antenatal care visits?				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
6.7	Are basic equipment and supplies available to ensure adequate provision of antenatal care, in particular:				
	a. an area for counseling that is private				
	b. a locked storage cupboard with appropriate medicines				
	c. an examination couch				
	d. sphygmomanometer				
	e. stethoscope				
	f. weight scale				
	g. tape measure				
	h. fetoscope				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
6.8	Do providers in your facility have protocols easily accessible/visible for quick reference for providing safe and effective antenatal care including the major objectives of antenatal care, the schedule of antenatal care visits, and timing and content of the minimum number of antenatal care visits?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATOR #7**		/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATORS #1, 2, 3, 4, 5, 6 and 7: - General questions relevant to all six indicators

#	***Answer key:*** **2=Yes, 1= Partially "needs improvement" 0=No, NA=not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
	ACCESS TO CARE				
7.1	Are the working hours posted and easy to see in the facility?				
7.2	Are there emergency instructions posted for non-working hours?				
7.3	Is the information about free-of-charge PHC services and drugs posted and easy to see in the facility?				
	Access Score / Total possible score (2 X number of items scored)	/	/	/	/
	RESPONSIVENESS / PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS				
7.4	Do providers treat clients respectfully, greet clients politely by name, listen attentively and answer their questions?				
7.5	Is some method (log book, suggestion box, patient survey)used by the clinic to determine patient satisfaction?				
7.6	In the last three months has anything changed in your facility based on the suggestions of clients?				
7.7	Is the community leader (Mayor) involved in solving community healthcare problems?				
	Responsiveness Score / Total possible score (2 X number of items scored)	/	/	/	/
	PHYSICAL ENVIRONMENT				
7.8	Does the facility have an uninterrupted power supply?				
7.9	Does the facility have adequate heating for examination and counseling spaces?				
7.10	Do all providers have a place to wash hands between seeing each patient including water and soap?				
7.11	Is received medicine stored properly in refrigerator according to correct temperature and placement in it?				
7.12	Does your facility have a system in place to monitor, maintain and repair/replace equipment if necessary?				
	Physical Environment Score / Total possible score (2 X number of items scored)	/	/	/	/
	MANAGEMENT				
7.13	Are there written job descriptions for all types of providers at the PHC facility?				
7.14	Are QIB/staff meetings regularly conducted to monitor and discuss the facility activities?				
7.15	Are client records kept in an orderly fashion, secure and away from public access?				
7.16	Do providers try to minimize client waiting time by having a nurse provide some tasks that do not require doctor's attention?				
7.17	Do providers send the client to the higher level facility with a note describing the reason for referral?				
7.18	Do providers request and record the outcome information of the visit from the referral facility?				
	Management Score / Total possible score (2 X number of items scored)	/	/	/	/
	TECHNICAL COMPETENCE				
7.19	Do PHC physicians at your facility participate in "every last 5-year cycle" continuous medical education?				
	Technical Competence Score / Total possible score (2 X number of items scored)	/	/	/	/
***Subtotal Score (sum of all dimensions' scores) for* INDICATORS #1- 7**		/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)
TOTAL FACILITY INTERNAL ASSESSMENT SCORE (sum of all above 6 sections' Subtotal scores)		*Q1* / ___(%)	*Q2* / ___(%)	*Q3* / ___(%)	*Q4* / ___(%)

B) Tool for PHC PROVIDER Self-Assessment

This tool is designed to review and self-assess **TECHNICAL COMPETENCE of PROVIDER Performance** and to determine if it meets acceptable standards. It is **specifically tailored with regard to the 7 pre-defined quality indicators** that will be implemented at the initial stages of the QA initiative throughout the PHC system in Armenia.

➢ INDICATOR #1: Full Immunization coverage of children at age 24 months, defined by national immunization calendar

#	***Answer key:*** **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
1.1	Does the provider wash hands between each contact with an infant/child when giving an immunization?				
1.2	Does the provider check the vaccine expiration date and prepare the injection according to the prescribed protocol?				
1.3	Does the provider clean the injection site (the external upper part of the arm)				
1.4	Does the provider record the vaccination in the record?				
1.5	Do you discuss with the parent when she/he should return for the next dose according to the immunization schedule?				
1.6	Do you ensure that the parent has a schedule of the immunizations and understands the importance of adhering to the schedule?				
1.7	Do you discuss possible side effects of the immunizations and what to do if symptoms occur?				
	Score for INDICATOR #1/ Total possible score (2 X number of items scored)	/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATOR #2: Screening for anemia in children at 1 year.

#	***Answer key:*** **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	***Q1***	***Q2***	***Q3***	***Q4***
2.1	Do you wash your hands between each contact with a patient when providing care?				
2.2	Do you counsel the parent about importance of breastfeeding and effective nutritional practices?				
2.3	Do you discuss with the parent signs and symptoms of anemia (pallor, weakness, fatigue, headache, dizziness?				
2.4	Do you provide/recommend vitamin supplements?				
2.5	Do you discuss with the parent when she/he should bring the child with anemia back to the clinic for further review and progress?				
2.6	Do you record findings and blood results from every visit in patient's record?				
	Score for INDICATOR #2/ Total possible score (2 X number of items scored)	/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATOR #3: Regular fundoscopic (eye) exams in patients with diagnosed Diabetes Mellitus Type II

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
3.1	Do you wash your hands between each contact with a patient when providing care?				
3.2	Do you calculate body mass index (BMI) for all adult diabetic patients and counsel based on the results?				
3.3	Do you collect the following information when a patient presents with the following set of symptoms: polyuria, thirst, weight loss, and vision change:				
	a. Past medical history (previous medical or surgical illness)				
	b. Family history (focus on diabetes, heart & vascular problems, kidney failure)				
	c. History of acute complications of hyperglycemia (diabetic ketoacidosis) or hypoglycemia				
	d. Other risk factors associated with complications (smoking, alcohol abuse, obesity, history of cholesterol elevation or hypertension, family history of diabetes).				
	e. Life style factors (occupation, level of daily exercise, eating patterns)				
	f. Dietary history (previous and recent)				
	g. Current medications				
3.4	Do you do the following during a physical examination of patients who present with the above set of symptoms (polyuria, thirst, weight loss, and vision change):				
	a. Take height and weight and calculate Body Mass Index				
	b. Perform an ophthalmoscopic exam: visual acuity, conduct fundoscopic exam or refer				
	c. Check mouth and teeth				
	d. Perform a urinalysis				
	e. Assess for any thyroid abnormalities				
	f. Do cardiac exam (heart sounds, heart size, heart beat and regularity)				
	g. Perform abdominal exam: liver, spleen enlargement, any mass				
	h. Check skin condition especially of extremities – color, pigmentation, abscess, oedema (especially of legs and feet)				
3.5	Do you ensure that the results of the fundoscopic exam are recorded and that the fundoscopic exam is repeated on an annual basis for patients diagnoses with Type II diabetes mellitus?				
3.6	Do you perform a fasting plasma glucose for **any** patient who comes to you complaining of symptoms suggesting hyperglycemia (polyuria, polydipsia, weight loss and blurred vision)?				
3.7	Do you perform a fasting plasma glucose for **any** patient who is overweight (BMI>25 kg/m^2) and has **one or more** of the following:				
	a. Age > 45 yrs				
	b. Family history (parents or siblings) of diabetes				
	c. Habitual physical inactivity				
	d. Previously identified impaired fasting glucose or impaired glucose tolerance				
	e. History of gestational diabetes or delivery of a baby weighing >4 kgs				
	f. Hypertension (>140/90)				

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
	g. HDL cholesterol <35 mg/dl (0.90 mmol/l) and (May need to refer)				
	h. Triglyceride level >250 mg/dl (2.82 mmol/l) (May need to refer)				
	i. Polycystic ovary syndrome				
	j. History of vascular disease				
3.8	Do you make the diagnosis of Type II diabetes based on current criteria (i.e., fasting plasma glucose >126 mg/dL or oral glucose tolerance test >200 mg/dL confirmed by repeat testing on a subsequent day)?				
3.9	Once a client has been tentatively diagnosed with Type II diabetes, do you refer to an endocrinologist?				
3.10	When the patient has been confirmed to have diabetes, do you develop an individualized plan that includes the following?				
	a. Appropriate frequency of blood glucose monitoring				
	b. Medical nutritional counseling				
	c. Regular exercise				
	d. Weight reduction when needed				
	e. Instruction in the prevention and treatment of hypoglycemia and other acute and chronic complications				
	f. Continuing patient education and reinforcement of compliance				
	g. Periodic reassessment of treatment goals				
3.11	Do you see the client for follow-up regularly (i.e., every 3-4 months) and prescribe that the patient return monthly for a blood glucose test?				
3.12	Do you record the results of each clinic visit including results of blood glucose test in medical record?				
	Score for INDICATOR #3/ Total possible score (2 X number of items scored)	/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ **INDICATORS #4 #5& #6:Regular ECG and Total Cholesterol Monitoring of Patients with diagnosed Hypertension and Ischemic Disease**

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
4/5.1	Do you wash your hands between each contact with a patient when providing care?				
4/5.2	Do you routinely measure the blood pressure of **all** clients 18 years of age and older who come to you for any kind of care?				
4/5.3	Do you measure the blood pressure with the client seated with back supported, arms bare and supported at heart level, using an appropriate cuff size, with no caffeine ingestion or smoking for at least 30 minutes before measurement?				
4/5.4	If the blood pressure is elevated (>120/80), do you repeat the blood pressure measurement during the same visit, and if still elevated repeat measurement with 2 readings (with interval of at least 2 minutes between) on 2 separate visits?				
4/5.5	Once the blood pressure has been confirmed, do you classify the patient's status as normal (<120/80), prehypertension (120-139/80-89), stage-1 (140-159/90-99) or stage-2 (>160/100) hypertension?				
4/5.6	Do you base your confirmation on the average of 2 or more elevated blood pressure readings taken at each of 2 or more visits after an initial screening?				
4/5.7	Do you explain to the patient recommended follow-up based on their classification or staging?				
	a. Normal: recheck within 2 years				
	b. Prehypertension: recheck within 1 year				
	c. Stage 1 hypertension: confirm within 2 months				
	d. Stage 2 hypertension: evaluate or refer as soon as possible, depending on clinical situation				
4/5.8	**Once you have made the diagnosis of hypertension, do you:**				
4/5.8_1	Ask about any symptoms including:				
	a. Frequent headaches				
	b. Visual impairment				
	c. Other symptoms related to target-organ damage including:				
	01. Muscle weakness				
	02. Leg cramps				
	03. Nocturia				
	04. Polyuria				
	05. Dizziness				
	06. Lightheadedness				
	07. Syncope				
	08. Dyspnea				
	09. Palpitations				
	10. Tachycardia				
	11. Chest pain				
	12. Diaphoresis				
	13. Flank pain				

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
4/5.8_2	Determine the client's cardiovascular risk factors including:				
	a. Age (>55 for men, >65 for women)				
	b. Diabetes				
	c. Elevated LDL cholesterol (may need to refer)				
	d. Low HDL cholesterol (may need to refer)				
	e. Hypodinamia				
	f. Microalbuminuria				
	g. Family history of premature cardiovascular disease (men <55 yrs, women <65 years)				
	h. Obesity (BMI>30 kg/m^2 or waist circumference >102 cm for men, 90 cm for women)				
4/5.8_3	Take a medical history focusing on:				
	a. lifestyle factors including:				
	01. eating habits				
	02. weight change				
	03. dietary intake of sodium and cholesterol				
	04. level and amount of exercise (how long, how many times during the week)				
	05. psychosocial stressors				
	06. patterns of alcohol and tobacco use				
	b. all medications used, including illicit, over the counter-prescription and herbal				
	c. past readings of high blood pressure?				
4/5.8_4	Take a family history focusing on:				
	a. hypertension				
	b. cardiovascular disease				
	c. cerebro-vascular disease				
	d. diabetes mellitus				
4/5.8_5	Perform an initial physical examination which includes:				
	a. 2 or more blood pressure measurements separated by 2 or more minutes with the patient first seated and after standing				
	b. Verification in the opposite arm (if different, the highest value should be used)				
	c. Measurement of height, weight, and waist circumference				
	d. Fundoscopic exam (hypertensive retinopathy)				
	e. Exam of the neck (carotid bruits, distended veins, enlarged thyroid)				
	f. Exam of the heart (abnormalities in rate and rhythm, increased size, precordial heave, murmurs and extra heart sounds)				
	g. Exam of the lungs (rales and bronchospasm)				
	h. Exam of the abdomen (bruits, enlarged kidneys, masses and abnormal aortic pulsation)				
	i. Exam of the extremities for neuropathy (diminished/absent peripheral arterial pulses, bruits, edema)				
	j. Neurological assessment?				

#	*Answer key:* 2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable	*Q1*	*Q2*	*Q3*	*Q4*
4/5.8_6	Perform an initial laboratory screening including:				
	a. 12 lead electrocardiogram				
	b. Urinalysis				
	c. Fasting blood glucose,				
4/5.8_7	Rule out secondary hypertension?				
4/5.9	**Once you have diagnosed the client and performed your initial assessment, do you develop an individualized plan with the client that includes:**				
4/5.9_1	Goals for blood pressure?				
4/5.9_2	Goals for lifestyle modifications including:				
	a. Weight reduction—maintain normal body weight				
	b. Dietary approaches to stop hypertension (DASH) eating plan—diet rich in fruits, vegetables and low-fat dairy products with a reduced content of saturated and total fat				
	c. Dietary sodium reduction—no more than 100 mmol/day or 2.4 g sodium or 6 g sodium chloride				
	d. Physical activity—regular aerobic physical activity at least 30-45 min/day most days of week				
	e. Moderate consumption of alcohol—no more than 2 drinks/day for men and 1 drink/day for women (1 drink=12 oz./340g beer, 5 oz./142g wine, 1.5 oz./42g of 80 proof spirits)				
4/5.9_3	Determine initial pharmacological therapy considering unique aspects of client including:				
	a. Age				
	b. cost				
	c. drug interactions & side effects				
	d. quality of life issues?				
	e. Other disease conditions (e.g gout, diabetes)				
4/5.9_4	Consider an ACE inhibitor or thiazide-type diuretic as initial therapy for most clients with uncomplicated hypertension?				
4/5.9_5	Once hypertensive drug therapy is begun, do you see your client at least monthly until their blood pressure goal is reached?				
4/5.9_6	At these follow-up visits, do you define whether goals have been met, reinforce positive behavior, identify problems, and identify areas that need further health education?				
4/5.9_7	Do you review lifestyle modification goals at each follow-up visit?				
4/5.10	**If the client has not met goal for his/her blood pressure, do you:**				
4/5.10_1	Increase the dose of the antihypertensive drug or add a second drug of a different class or substitute another single drug from a different class?				
4/5.10_2	Consider a low-dose diuretic use early or as first addition?				
4/5.10_3	Screen for barriers to long-term adherence to therapy?				
4/5.10_4	Review drugs (prescription and over the counter) or other practices that may interfere with BP goal?				
4/5.10_5	Assess for adherence to treatment by asking open-ended/nonjudgmental questions about treatment regimen?				
4/5.10_6	If patient is having problems following the treatment plan, do you:				
	a. Provide education about the medication and how it fits with the treatment plan?				
	b. Simplify the regimen?				

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
	c. Use patient adherence aids?				
	d. Offer support group sessions (like School for Chronic Disease Management)?				
	e. Send reminders for medication refills and appointments?				
	f. Cue medications to daily events?				
	g. Offer positive reinforcement?				
	h. Actively involve family members and other people in management of disease and to provide support/encouragement?				
4/5.11	**Once the blood pressure is at goal and stable, do you:**				
4/5.11_1	See clients for follow-up at 3-6 month intervals?				
4/5.11_2	Assess patient adherence, patient satisfaction and changes in target organ status?				
4/5.11_3	Review, re-emphasize and document lifestyle modifications at least annually?				
4/5.11_4	Consider decreasing the dosage or number of anti-hypertensive drugs while maintaining lifestyle modification if the goal blood pressure has been maintained and documented for at least one year?				
4/5.11_5	Do you record findings from each visit including results of laboratory and diagnostic tests in patient's record?				
	Score for INDICATORS #4, 5 & 6/ Total possible score (2 X number of items scored)	/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

➢ INDICATOR #7: Early detection and registration in first 12 weeks of pregnancy and coverage of pregnant women for antenatal care.

#	*Answer key:* **2= Yes; 1= Yes, but needs improvement; 0 = No; NA = Not applicable**	*Q1*	*Q2*	*Q3*	*Q4*
6.1	Do you wash your hands between each contact with a patient when providing care?				
6.2	Do you provide at each antenatal visit counseling and screening for potential health problems (e.g. screening for pre-eclampsia, anaemia, fetal lie, presentation. preparation for labor and delivery, and what to bring to the hospital for delivery and brining baby home)?				
6.3	Do you discuss warning/danger signs of pregnancy (like bleeding, headache, eye problems, swelling of face and hands) and instructs client to come to clinic immediately should any sign occur.				
6.4	Do you provide/recommends vitamin supplements.				
6.5	Do you discuss with the pregnant woman when she should return for her next antenatal visit?				
6.6	Do you record findings from each visit in the pregnant woman record?				
	Score for INDICATOR #7 / Total possible score (2 X number of items scored)	/ (%)	/ (%)	/ (%)	/ (%)

TOTAL self-assessment SCORE of PROVIDER'S TECHNICAL COMPETENCE (sum of all above 5 sections' Subtotal scores)	*Q1*	*Q2*	*Q3*	*Q4*
	/ ___(%)	/ ___(%)	/ ___(%)	/ ___(%)

Resolution of Quality Performance Gaps identified by means of the PHC Facility/Provider Internal (self-) Assessment Tool

Note: **Any lines of the above sections, which are assessed as "Partially yes" or "No" (or scored as 1 or O) should be reflected in the action plan** *(see Section VIII "Supportive Supervision Action Plan for Quality Assurance)*as shown below:

Quar-ter #	Issue/ Ques-tion #	Revealed by means of...	Problem / Issue / Identified Gap	Root Cause(s)	Solutions / Actions / Next steps	Responsible person(s)	Deadline	Status of Resolution (not started, in progress, completed - date)
		Facility ISA* **-or-** **Provider ISA**						

* * **ISA –** Internal (Self-) Assessment

Section V.

MEDICAL CHART/CASE REVIEW IN PRIMARY HEALTH CARE FACILITIES

Monitoring of the Clinical Management of certain PHC conditions/diseases conducted through the Review of Medical Records/Charts (hereinafter referred to as ***"Medical Chart/Case Review" or "MCR"***) is a regular and continuous process aimed at continuous improvement of the quality of Primary Health Care services.

Objective:

Assure the quality management of most common PHC-sensitive cases[8] in PHC facilities, by means of:

- ✓ monitoring and supervisory support in addressing the identified issues,
- ✓ cross learning among PHC providers,
- ✓ continuous (self-)education and development of PHC physicians,
- ✓ improvement in clinical recordings.

General provisions:

1. Technical review of the medical charts/cases allows assessing appropriateness of management of the given case of disease or condition against the EBM-based "best practice standards".
2. The basic references used for MCR include evidence-based literature, the National Healthcare programs, as well as the internationally recognized and adopted in Armenia "best practice" standards, such as clinical guidelines, protocols, Job Aids or other algorithms *(see the examples of Clinical Job Aids in the Section VI)*.
3. All PHC facilities – polyclinics, ambulatories, health centers, FM practices - should participate in Medical Chart/Case Review (MCR) process.
4. All the practicing PHC physicians, heads of departments, facility leaders (directors and their deputies in charge of medicine/expertise), and members of the Quality Improvement Boards *(Section II)* should participate in the Medical Chart/Case Review process.
5. The chart/case review will be implemented through supportive supervision, problem-solving and effective feedback approaches. Based on the results of chart review, work with the corresponding Facility Quality Improvement Board to prioritize, assign and undertake supportive measures for improvement of the quality of care, and assure follow-up evaluation of effectiveness of the quality interventions.
6. Medical chart/case review must be performed by assuring the principles of patient privacy and medical information confidentiality.

Terms of References for MCR participants

1. The Quality Improvement Board oversees, coordinates and supports the MCR processes in PHC facility (or group of facilities). It undertakes supportive measures for improvement of the quality of care, and assures follow-up evaluation of their effectiveness; presents quarterly Reports on MCR to the Marz /Yerevan city Healthcare Department.

[8] "Case" – set of healthcare/medical activities (encounters, diagnostic, treatment, rehabilitation, follow-up, counseling, patient education and other healthcare/medical interventions/procedures) implemented throughout certain period of time and needed to manage one case (or relapse episode) of a disease or condition.

2. PHC supervisors (head of department, deputy director or head physician in charge of medicine/medical expertise) are mostly functioning as reviewers.
3. Practicing physicians may assume both the role of a reviewer and reviewee depending on the type of facility where they work.
4. The Chairperson of the Quality Improvement Board assigns a person responsible for MCR Form Circulation. S/he is usually a nurse who is responsible for distributing and collecting the MCR forms and randomly selected medical charts to the reviewers.

Procedure of the Medical Chart/Case Review

Depending on the type of PHC facility, various formats of the chart/case review are used: it may be performed either in the "supervisory" (supervisor-physician) or "peer" (physician-physician) formats. The format to be used in each given PHC facility (or group of facilities) is determined by the corresponding Quality Improvement Board.
Quality Improvement Boards also define and periodically reconsider the list of diseases/conditions that are to be reviewed in the given PHC facility (or the group of facilities)

1. ***Scenario "A"*: - In the larger PHC facilities - policlinics, ambulatories, health centers, FM group practices with more than 3 functioning physicians, including their referral network(s),** where there is a technical supervisory "hierarchy" within the organization, chart/case review is normally an integral part of the PHC supervisors' scope of work. The chart/case review in these facilities is performed in the "supervisory" format – by the heads of departments. In case of the absence of the department heads' positions, this task is assigned to the Deputy Director in charge of medicine/medical expertise or, in case of the absence of the Deputy Director's position, the task is delegated to the other senior physician.
   1.1. Every first Monday of each month the head of department (or other assigned reviewer) selects reviewees out of PHC physicians of the department (facility).
   ►*Selection is done in such a way that every physician, subordinate to the given reviewer, would be reviewed at least once during that quarter.*
   1.2. The person responsible for MCR Form circulation randomly selects an outpatient medical chart of any of the patients with the identified health conditions/diseases, seen by the reviewee within the previous weeks, and hands it to the head of department (or other assigned reviewer) together with a MCR checklist *(see Form 1 in this Section, page39)*.
   1.3. Until the end of the second week Friday the reviewer is to review the chart/case, present the MCR Form to the reviewee and discuss the results with him/her.
   ► *Medical chart/case reviews are to be conducted according to the parameters/dimensions, which are identified in MCR Form, and on the base of detail recommendations given in the national EBM standards - guideline, protocol, Job Aid.*
   1.4. If the reviewee disagrees with the MCR results and the problem is not solved by the reviewer-reviewee discussion, it should be solved during the Quality Improvement Board meeting.
   1.5. If the reviewee agrees with the MCR results, the MCR Form is held with reviewer and the outpatient record form is taken back to the medical record department (Registry).
   1.6. All the negative comments or controversial cases should be discussed at the Quality Improvement Board meeting, regardless of the fact whether the reviewee agrees or disagrees with them.
   1.7. Resulting from the chart/case review discussions the PHC Quality Improvement Board undertakes supportive measures for improvement of the quality of care *(Section VIII)* and assures follow-up evaluation of their effectiveness.
   1.8. The reviewer is responsible for collecting and filing the MCR Forms, and summarizing their results.
   1.9. The reviewee is responsible for returning the outpatient medical record to the medical record department (Registry).
   1.10. Head of the department (or other assigned reviewer):

- summarizes the MCR results in the Summary form *(see Form 2 in this Section, page 41)*, with attached all MCR Forms, and
- completes monthly Report Form *(see Form 3 in this Section, pages 42)* with attached all MCR forms that contain negative comments, and submits the Report to the Chairperson of Quality Improvement Board before the 5th of the next Month.

1.11. The Chairperson of the Quality Improvement Board presents a Report on MCR *(see Form 3 in this Section, page42)* to the Marz /Yerevan city Healthcare Department on a quarterly basis, before the 15th of the Month following the reporting period.

2. ***Scenario "B"*: -In the smaller PHC facilities (autonomous FM practices, ambulatories or Health Centers voluntarily clustered under the "umbrella" Quality Improvement Board),** where there are less than three (mostly only one or two) physicians and no intra-organizational technical supervision "hierarchy" for physicians, the chart/case review process may be performed in an alternative "peer" format: - the review is carried out by the colleagues (physicians, heads of "sister" facilities) and coordinated by the Quality Improvement Board.

2.1. Every first Monday of each month the Chairperson of the Quality Improvement Board selects reviewees and reviewers out of the PHC physicians of facilities clustered under the given Board.

► *Selection is done in such a way that every physician of the facilities, clustered under the given Board, would be reviewed at least once during that quarter.*

2.2. The person responsible for MCR Form circulation randomly selects an outpatient medical record of any of the patients with the identified health conditions/diseases, seen by the reviewees within the previous weeks, and hands it to the reviewer together with a MCR Form *(see Form 1 in this Section, page 39)*.

2.3. Until the end of the second week Friday the reviewer is to review the case, present the MCR Form to the reviewee and discuss the results with him/her.

► *Medical chart/case reviews are to be conducted according to the parameters/dimensions, which are identified in MCR Form, and on the base of detail recommendations given in the national EBM standards - guideline, protocol, Job Aid.*

2.4. If the reviewee disagrees with the MCR results and the problem is not solved by the reviewer-reviewee discussion, it should be solved during the Quality Improvement Board meeting.

2.5. If the reviewee agrees with the MCR results, the MCR Form is given to the person responsible for MCR form circulation, and the outpatient record form is taken back to the medical record department (Registry).

2.6. All the negative comments or controversial cases should be discussed at the Quality Improvement Board meeting, regardless of the fact whether the reviewee agrees or disagrees with them.

2.7. Resulting from the chart/case review discussions the Quality Improvement Board undertakes supportive measures for improvement of the quality of care *(Section VIII)*., and assures follow-up evaluation of their effectiveness

2.8. The reviewer is responsible for returning the MCR Form to the person responsible for MCR Form circulation.

2.9. The reviewee is responsible for returning the outpatient medical record to the medical record department (Registry).

2.10. The person responsible for MCR Form circulation:

- collects all the completed MCR Forms, and
- summarizes the MCR results in the Summary form *(see Form 2 in this Section, page 41)*, with attached all MCR Forms, and
- completes monthly Report Form *(see Form 3 in this Section,, page 42)* with attached all MCR Forms that contain negative comments, and submits it to the Chairperson of Quality Improvement Board before the 5th of the next Month.

2.11. The Chairperson of the Quality Improvement Board presents a Report on MCR *(see Form 3 in this Section, page 42)* to the Marz /Yerevan city Health Care Department on a quarterly basis, before the 15th of the Month following the reporting period.

How to Complete the Medical Chart Review Forms:

1. The person responsible for MCR Form circulation puts down on the MCR form the number of the outpatient medical chart/record and the names of both reviewee and reviewer.
2. If the outpatient medical chart/record does not have a number yet, the name as well as the address of the patient must be indicated in the MCR form (in case if necessary to retrieve the record).
3. The date of the visit is indicated by the reviewer (the date of the patient's first visit for the given health problem is indicated).
4. Each dimension (line) should be assessed and marked correspondingly in one of the "Yes", "Partly", "No" or "Not applicable" columns.
5. Lines assessed as "Partly" or "No" should be explained in the corresponding cell of the "Comments".

6. The comments on "Partly" or "No" answers for the line *"Overall consistency with the used for review EBM standard or the reasons for inconsistencies indicated"* must be recorded in the special table on the reverse side of MCR Form.
   6.1. Types of inconsistencies are classified into the following main groups[9]
      6.1.1. DIAGNOSTIC *(E.g., misdiagnosis; failure to use indicated diagnostic tests; unnecessary testing, misinterpretation of test results ...)*
      6.1.2. TREATMENT *(E.g., inconsistencies in prescribing medication, or administering /performing a treatment intervention /procedure; avoidable delay or failure in treatment or in responding to an abnormal test results; inappropriate (not indicated) care…)*
      6.1.3. PREVENTIVE *(E.g., failure to undertake prophylactic measures/counseling/education; inadequate monitoring or follow-up of treatment…)*
      6.1.4. OTHER *(E.g., system / organization of health care delivery failure; failure of communication; equipment failure…)*
7. The subtotal scores for each column ("Yes", "Part.", "No" or "NA") and the Total Review Score in absolute numbers are calculated and put into the corresponding cells (e.g., 20/out of 24). The maximum possible score is 24 (12 indicators *x* 2 points for "Yes" = 24 points).
8. Based on the Total Review Score, the Quality Index (QI) for the reviewed case is calculated in %-age (for the above example, the QI comes to 20 ÷24 *x* 100 = 83%).
9. In order the reviewed case to be considered as of "Complete Adherence", i.e. of acceptable quality, its Quality Index should be not less than **75%**.
10. The references (Job Aids, guidelines, protocols, other algorithms, literature…) used for review should be indicated.
11. Both the reviewee and reviewer should sign the MCR Form. If the reviewee does not agree with the assessment results s/he does not sign the MCR Form.

[9] SOURCE: Leape, Lucian; Lawthers, Ann G.; Brennan, Troyen A., et al. Preventing Medical Injury. *Qual Rev Bull*. 19(5):144–149, 1993.

Form 1

Model CHECKLIST for Medical Chart/Case Review

PHC site name	Type of facility	
Name and title/specialty of the provider	Patient's chart #____ or name & address	Date(s) of visit_____
Ds:	Name of the reviewer	Review date _____

Review dimensions (1)	**Yes**	**Part**	**No**	**N/A**	**Comments (3)**
Score points **(2)**	(2)	(1)	(0)	(2)	
1. History taken: - reflects the basic information about the disease/case (?)					
2. Drug allergies: - asked about and indicated (?)					
`Physical examination: - adequate (?)					
4. Diagnostic procedures: - adequate and well-founded (?)					
5. Specialty consultations /referrals: - well-founded and timely (?)					
6. Diagnose(s) /differential diagnoses: - well-founded and appropriate (?)					
7. Treatment plan: - adequate and appropriate (?)					
8. Prescriptions *(dose, dosage form, regimen, treatment duration):* - appropriate (?)					
9. Patient counseling /education: - appropriate (?)					
10. Follow-up: - appropriate (?)					
11. Overall case management: - consistent with the used for review EBM standard (guideline, protocols, algorithm, Job Aid) or the reasons for inconsistencies are well-founded (?)					***See comments on the reverse side***
12. Medical records: - readable (?)					
TOTAL Review SCORE					**___ / out of 24**
QUALITY INDEX (QI)	_____ (%)				

(1) *For the specific condition/disease the appropriateness of each of these dimensions will be specifically evaluated on the base of detail recommendations given in the national EBM standards - guideline, protocol, Job Aid. (See examples in Section VI)*

(2) Yes = 2 points; Part.-Partly = 1 points; No=0 point; N/A-Not applicable = 2 point

(3) Lines assessed as "Partly" or "No" should have an explanation of assessment.

List references used for review (Job Aids, guidelines, protocols, other algorithms, EBM-based literature…):	
Please mention at least one most positive aspect of care provided:	
Please mention one most important suggestion for the physician to improve the care:	
Please mention one most important suggestion for Quality Improvement Committee and administration to improve the care:	
Reviewer signature:	Provider signature. Date.
I became acquainted with the results. *Chairperson to the Quality Improvement Board:* *(name)* *Signature* *Date*	

See cont. on the next page

Form 1 *(cont.)*

#	Types of inconsistencies	Description
1.	**DIAGNOSTIC** *(E.g., misdiagnosis; failure to use indicated diagnostic tests; unnecessary testing, misinterpretation of test results …)*	
2.	**TREATMENT** *(E.g., inconsistencies in prescribing medication, or administering /performing a treatment intervention /procedure; avoidable delay or failure in treatment or in responding to an abnormal test results; inappropriate (not indicated) care…)*	
3.	**PREVENTIVE** *(E.g., failure to undertake prophylactic measures/counseling/education; inadequate monitoring or follow-up of treatment…)*	
4.	**OTHER** *(E.g., system / organization of health care delivery failure; failure of communication; equipment failure…)*	

Form 2

Medical Chart/Case Review SUMMARY

(For internal use within the facility)

Summary period: *From* __ / __ / _____ *To* __ / __ / _____
PHC facility (facilities) name(s) _____

# #	Name of the reviewed physician & position / specialty	Name of the reviewer	Patient's chart # or name	QUALITY INDEX	Number of inconsistencies with EBM standards				Submitted to the Quality Board (date)
					DIAGNOS-TIC	TREAT-MENT	PREVEN-TIVE	OTHER	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									

Responsible for summary _____ (position, name) _____ (signature) _____ (date)

Form 3

Medical Chart/Case Review REPORT

(Monthly / Quarterly)

Reporting period: *From* __ / __ / _____ *To* __ / __ / _____
PHC facility name _____

# #	Position /Specialty of the reviewed physicians	Number of reviewed charts	# of charts by QUALITY INDEX			Number of inconsistencies with EBM standards			
			< 55%	55–74%	75% >	DIAGNOSTIC	TREATMENT	PREVENTIVE	OTHER
TOTAL									

Reporter _____ (position, name) _____ (signature) _____ (date)

See cont. on the next page

Recommendations to improve the quality of care:

_____
_____
_____
_____ _
_ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _

Section VI.

CLINICAL JOB AIDS

The presented below Clinical Job Aids serve as the "best practice" standards used for basic reference during the implementation of Medical Chart / Case Review technique for the following diseases/conditions:

Management of HYPERTENSION in adults in Primary Health Care
Management of STABLE ANGINA in Primary Health Care
Management of TYPE 2 DIABETES MELLITUS in Primary Health Care

MANAGEMENT OF HYPERTENSION IN ADULTS IN PRIMARY CARE

*Clinical Job Aid **

Measuring blood pressure

BP Category	SBP mmHg		DBP mmHg
Normal	<120	and	<80
Prehypertension	120–139	or	80–89
Hypertension, Stage 1	140–159	or	90–99
Hypertension, Stage 2	≥ 160	or	≥ 100

SBP = systolic blood pressure
DBP = diastolic blood pressure

- Devices for measuring blood pressure must be properly validated, maintained and regularly recalibrated.
- Where possible, when measuring blood pressure, provide a relaxed, temperate setting, with the patient quiet and seated and with their arm outstretched and supported.
- If the first measurement exceeds 140/90 mmHg, if practical, take a second confirmatory reading at the end of the consultation.
- Measure blood pressure on both of the patient's arms with the higher value identifying the reference arm for future measurement.
- In patients with symptoms of postural hypotension (falls or postural dizziness) measure blood pressure while patient is standing. In patients with symptoms or documented postural hypotension (fall in systolic BP when standing of 20 mmHg or more) consider referral to a specialist.
- Refer immediately patients with accelerated (malignant) hypertension (BP more than 180/110 mmHg with signs of papilloedema and/or retinal haemorrhage) or suspected pheochromocytoma (possible signs include labile or postural hypotension, headache, palpitations, pallor and diaphoresis).
- To identify hypertension (persistent raised blood pressure, above 140/90 mmHg), ask the patient to return for at least two subsequent clinics where blood pressure is assessed from two readings.
- Measurements should normally be made at monthly intervals. However, patients with more severe hypertension should be re-evaluated more frequently.
- Routine use of automated devices for ambulatory or home blood pressure monitoring is not currently recommended because their value has not been adequately established; this remains an issue for further research.

Lifestyle interventions

- Ascertain patients' diet and exercise patterns. Offer appropriate guidance and written or audiovisual materials to promote lifestyle changes.
- Encourage patients to maintain normal body weight (body mass index 18.5–24.9kg/m2).
- Encourage patients' regular aerobic physical activity (e.g., brisk walking) at least 30 minutes per day, most days of the week.
- Discourage excessive consumption of coffee and other caffeine-rich products. Adopt a diet rich in fruits, vegetables, and low fat dairy products with reduced content of saturated and total fat.
- Encourage patients to reduce dietary sodium intake to <100 mmol per day (2.4 g sodium or 6 g sodium chloride).
- Offer advice and help to smokers to stop smoking.
- Encourage a reduced alcohol consumption if patients drink excessively. [Men: limit to <2 drinks* per day. Women and lighter weight persons: limit to <1 drink* per day. *1 drink = 1/2 oz or 15 mL ethanol (e.g., 12 oz beer, 5 oz wine, 1.5 oz 80-proof whiskey)*].

Cardiovascular risk

- If raised blood pressure persists and the patient does not have established cardiovascular disease, discuss with them the need to formally assess their cardiovascular risk. Tests may help identify diabetes, hypertensive damage to the heart and kidneys, and secondary causes of hypertension.
- Test for presence of protein in the patient's urine; assess plasma glucose, electrolytes, creatinine, serum total cholesterol and HDL cholesterol; performed a 12-lead ECG.
- Consider the specialist investigation of patients with symptoms of a secondary hypertension. Accelerated (malignant) hypertension and suspected pheochromocytoma require immediate referral.
- Use the cardiovascular risk assessment to discuss prognosis and healthcare options with patients, both for raised blood pressure and other modifiable risk factors.

Major Cardiovascular Disease (CVD) Risk Factors

- Sleep apnea
- Drug induced/related
- Chronic kidney disease
- Primary aldosteronism
- Renovascular disease
- Physical inactivity
- Microalbuminuria
- Age (>55 for men, >65 for women)
- Family history of premature CVD (men age <55, women age <65)

Drug treatment *(See flowchart for further information)*

Target BP

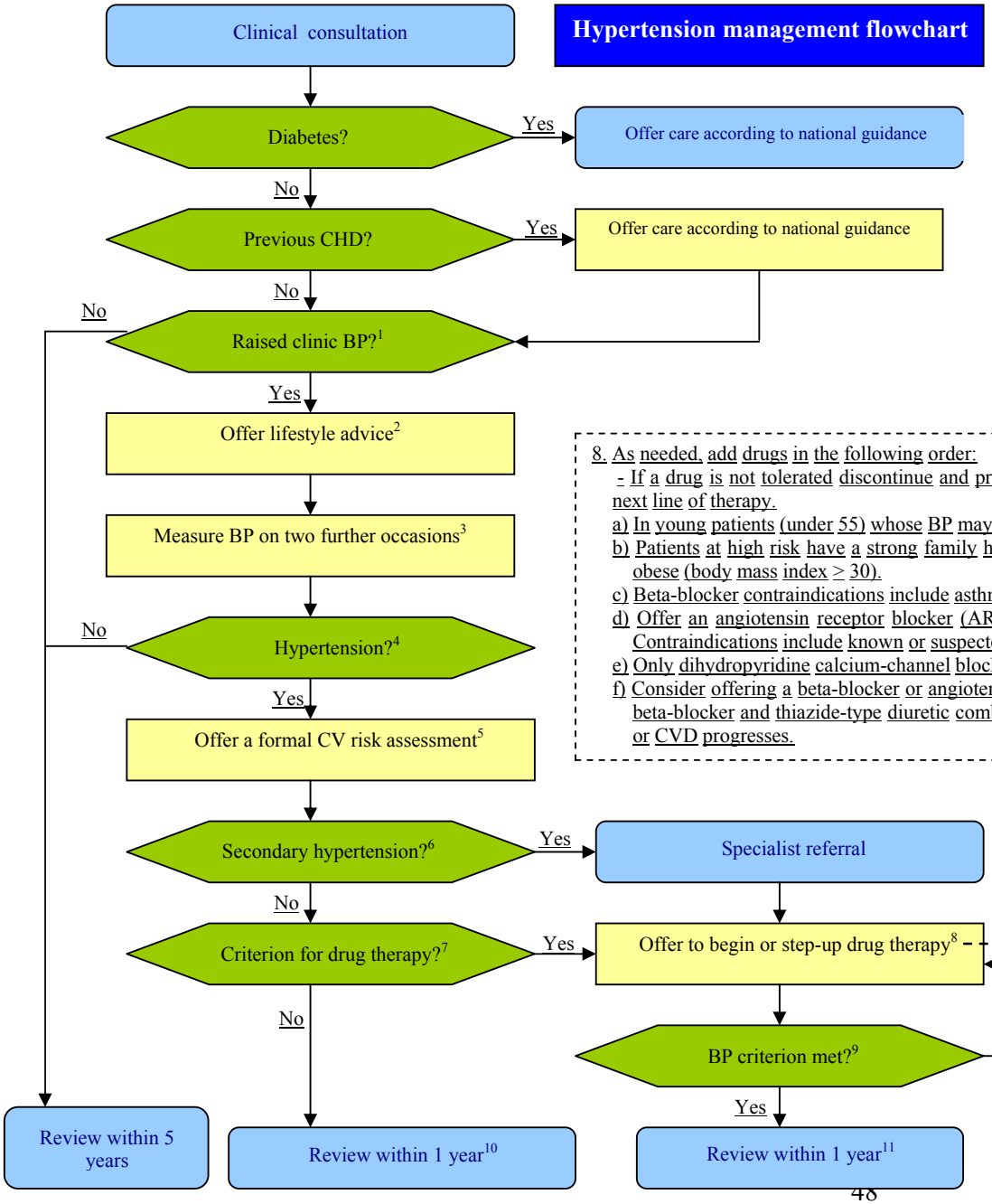
Treat to BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.

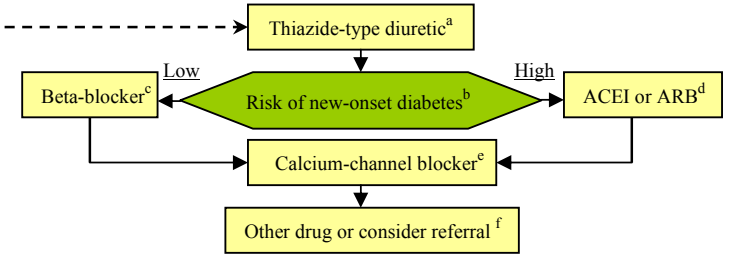
- In order to help patients make informed choices, provide appropriate information about the benefits of drugs and the unwanted side effects.
- Offer drug therapy, adding different drugs if necessary, to achieve a target of 140/90 mmHg, or until further treatment is inappropriate or declined. Titrate drug doses according to EBM standards noting any cautions and contraindications.
- Offer treatment as described to patients regardless of age and ethnicity. Be prepared to tailor drug therapy for individual patients who do not respond to the sequence of drugs indicated.
- Offer patients with isolated systolic hypertension (systolic BP >160 mmHg) the same treatment as patients with both raised systolic and diastolic blood pressure.
- Offer patients over 80 years of age the same treatment as younger patients, taking account of any comorbidity and their existing burden of drug use.
- Where possible, recommend treatment with drugs taken only once a day. Prescribe non-proprietary drugs where these are appropriate and minimize cost.

Continuing treatment

- The aim of medication is to reduce blood pressure to 140/90 mmHg or below. However, patients not achieving this target, will still receive worthwhile benefit from the drug(s) if these lower blood pressure.
- Patients may want to make lifestyle changes and to reduce or stop using antihypertensive drugs. If at low cardiovascular risk and with well controlled blood pressure, these patients may be offered a trial reduction or withdrawal of therapy with appropriate lifestyle guidance and ongoing review.
- Provide an annual review of care to monitor blood pressure, provide patients with support and discuss their lifestyle, symptoms and medication.

Hypertension management flowchart





1. Raised blood pressure (BP) ≥ 140/90 mmHg (BP ≥ 140/90 means either or both systolic and diastolic exceed threshold). Take a secondary confirmatory reading at the end of the consultation.
2. Explain the potential consequences of raised BP. Promote healthy diet, regular exercise and smoking cessation.
3. Ask the patient to return for at least two subsequent clinics at monthly intervals, assessing blood pressure.
4. Hypertension: persistent raised BP ≥ 140/90 mmHg at the last two visits.
5. Cardiovascular (CV) risk assessment may identify other modifiable risk factors. Risk charts and calculators are less valid in patients with cardiovascular disease (CVD) or on treatment.
6. Refer patients with signs and symptoms of secondary hypertension to a specialist. Refer patients with malignant hypertension or suspected pheochromocytoma for immediate investigation.
7. Offer treatment for: *(A)* BP ≥ 160/100 mmHg; or *(B)* BP ≥ 140/90 mmHg and (10-year coronary heart disease [CHD] risk ≥15%, CVD risk ≥ 20% or existing CVD or target organ damage). Consider other treatments for raised cardiovascular risk including lipid lowering and antiplatelet therapies.
8. As needed, add drugs in the following order:
   - If a drug is not tolerated discontinue and proceed to the next line of therapy. If a drug is tolerated but target BP is not achieved, add the next line of therapy.
   a) In young patients (under 55) whose BP may be managed on monotherapy, consider starting with a beta-blocker.
   b) Patients at high risk have a strong family history of type 2 diabetes, have impaired glucose tolerance (FPG ≥ 6.5 mmol/l), are clinically obese (body mass index ≥ 30).
   c) Beta-blocker contraindications include asthma, chronic obstructive pulmonary disease and heart block.
   d) Offer an angiotensin receptor blocker (ARB) if an angiotensinconverting enzyme inhibitor (ACEI) is not tolerated because of cough. Contraindications include known or suspected renovascular disease and pregnancy.
   e) Only dihydropyridine calcium-channel blockers should be prescribed with a beta-blocker. Contraindications include heart failure.
   f) Consider offering a beta-blocker or angiotensin-converting enzyme inhibitor (ACEi if not yet used), another drug or specialist referral. A beta-blocker and thiazide-type diuretic combination may become necessary in patients at high risk of developing diabetes if hypertension or CVD progresses.
9. BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.
10. Check BP, reassess CV risk and discuss lifestyle.
11. Review patient care: medication, symptoms and lifestyle.

*** References:** NICE Clinical Guideline 18, Aug.2004; www.nice.org.uk/CG018distributionlist / **&** / JNC7 Ref.Card, May 2003; http://www.nhlbi.nih.org)

MANAGEMENT OF STABLE ANGINA IN PRIMARY HEALTHCARE

Clinical Job Aid (1)

CLINICAL ASSESSMENT AND DIAGNOSIS

Main characteristics of Typical angina:

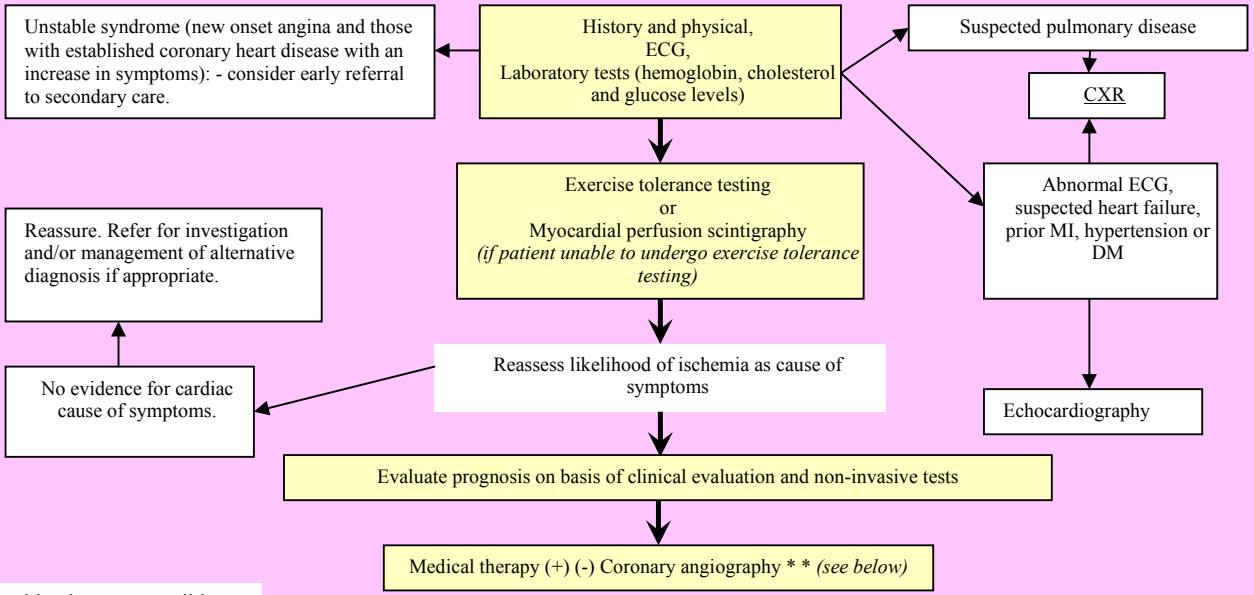
- Chest pain* felt across a wide area in the middle/left of the chest (not in the cardiac apex) often retrosternal, and is tight and constrictive in nature. May radiate to the neck, jaw, arms, epigastric region, or back
- Provoked by exertion or emotional stress. Maybe precipitated by cold weathe or after a heavy meal.
- Relieved by rest and/or glyceryl trinitrate (GTN)

** Some patients describe discomfort, heaviness or breathlessness, rather than pain.*

Angina Classification *(Canadian Cardiovascular Society)*

Class I	"Ordinary physical activity does not cause angina" - such as walking or climbing stairs. Angina with strenuous or rapid or prolonged exertion at work or recreation.
Class II	"Slight limitation of ordinary activity": - Angina precipitated by emotion, cold weather or meals, and by walking up stairs (more than one flight) or walking more than ~200m at a normal pace.
Class III	"Marked limitations of ordinary physical activity": - Angina precipitated by walking up stairs (less than one flight) or walking less than 200m at a normal pace.
Class IV	"Inability to carry out any physical activity without discomfort"– anginal symptoms may be present at rest.

Algorithm for initial evaluation of patients with clinical symptoms of angina *



* Following initial assessment in primary care, patients with suspected angina should, wherever possible, have the diagnosis confirmed and the severity of the underlying coronary heart disease assessed on the secondary care level.

* * Coronary angiography should be considered after non-invasive testing where patients are identified to be at high risk or where a diagnosis remains unclear.

PHARMACOLOGICAL MANAGEMENT *(See flowchart for further information)*

► First line therapy

β-Blockers should be used as first line therapy for the relief of symptoms of stable angina. *Patients with Prinzmetal (vasospastic) angina should be treated with a dihydropiridine derivative Ca- channel blocker.*

⇨ Patients who are intolerant of β-Blockers should be treated with either rate limiting Ca-channel blockers, long-acting nitrates or nicorandil.

► Nitrates

Sublingual glyceril trinitrate tablets or spray should be used for the immediate relief of angina and before performing activities that are known to bring on angina.

► Combination therapy

If adequate control of anginal symptoms is not achieved with β-Blockade a Ca-channel blocker should be added. ⇨ Rate-limiting Ca-channel blockers should be used with caution when combined with β-Blockers.

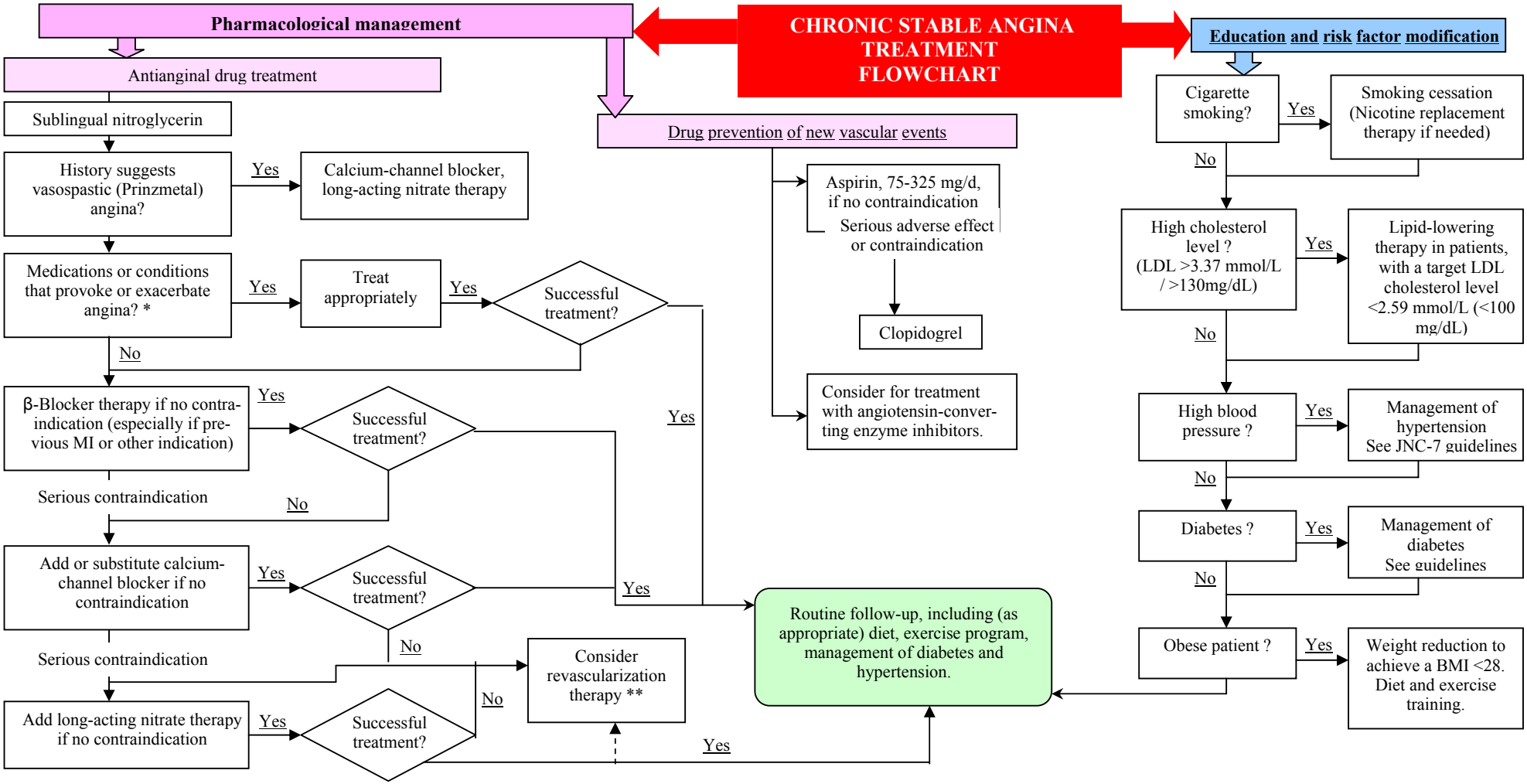
⇩ ⇩

Patients whose symptoms are not controlled on maximum therapeutic doses of two drugs should be considered for referral to a cardiologist and revascularization.

► Drug interventions to prevent new vascular events

All patients with stable angina due to atherosclerosis should receive long term aspirin and statin therapy.

All patients with stable angina should be considered for treatment with angiotensin-converting enzyme inhibitors.



* Medications: vasodilators, excessive thyroid replacement, and vasoconstrictors; other medical problems: profound anemia, uncontrolled hypertension, hyperthyroidism, and hypoxemia; other cardiac problems: tachyarrhythmias, bradyarrhythmias, valvular heart disease (especially aortic stenosis), and hypertrophic cardiomyopathy.

** At any point in this process, on the basis of coronary anatomy, severity of anginal symptoms, and patient preferences, it is reasonable to consider evaluation for coronary revascularization. Unless a patient is documented to have left main, three-vessel, or two-vessel coronary artery disease with significant stenosis of the proximal left anterior descending coronary artery, no demonstrated survival advantage is associated with revascularization in low-risk patients with chronic stable angina; thus, medical therapy should be attempted in most patients before percutaneous transluminal coronary angioplasty or coronary artery bypass surgery is considered.

REVASCULARIZATION *(The method of revascularization is defined by coronary anatomy and the location and number of stenoses as confirmed by coronary angiography)*

► **All patients:** Coronary artery bypass grafting (CABG) and percutaneous transluminal coronary angioplasty (PTCA) are both appropriate options for the alleviation of anginal symptoms.

►**Patients with single or double vessel disease,** where optimal medical therapy fails to control angina symptoms, should be offered PCTA or where unsuitable, considered for CABG.

►**Patients with significant left main stem disease** should undergo CABG.

► **Patients with triple vessel disease** should be considered for CABG to improve prognosis, but where unsuitable be offered PTCA.

(1) REFERENCES: **- Guidelines for the Management of Patients with Chronic Stable Angina: Treatment.** *16 October 2001 Annals of Internal Medicine Volume 135, Number 8 (Part 1);* **Management of Stable Angina.** *Scottish Intercollegiate Guideline Network, National clinical guideline, Feb 2007;* **Guidelines on the management of stable angina pectoris.** *European Society of Cardiology, 2006;* **Coronary heart disease (CHD): symptoms, diagnosis and treatment.** Finnish Medical Society Duodecim, 2006.

MANAGEMENT OF TYPE-2 DIABETES MELLITUS IN PHC PRACTICES

Clinical Job Aid for Family Physicians *

A. DIAGNOSIS AND CLASSIFICATION

Symptoms (polyuria, polydipsia, weight loss) + Casual plasma glucose ≥200mg/dl (11.1mmol/l) OR Fasting plasma glucose ≥126mg/dl (7.0mmol/l)

1. Criteria for diagnosis

	Fasting Plasma Glucose (FPG) (preferred) 1	Casual Plasma Glucose (CPG) 2	Oral Glucose Tolerance Test (OGTT) 3	Comments
Diabetes Mellitus Type 1 (DM_T1)	≥126 mg/dl (7.0 mmol/l)	≥200 mg/dl (11.1 mmol/l) plus symptoms of diabetes	Two-hour plasma glucose (2hPG) ≥200 mg/l (11.1 mmol/l)	Mostly results from autoimmune destruction of the beta cells of the pancreas. Patients are dependent upon insulin for survival and are at risk for ketoacidosis. Commonly occurs in childhood and adolescence but may occur at any age.
Diabetes Mellitus Type 2 (DM_T2)				Is due to insulin resistance and relative insulin deficiency. Patients do not need insulin to survive but may require insulin over time for optimal management, especially if oral agents become ineffective. Is often asymptomatic in its early stages. Patients are at increased risk for developing macro- and microvascular complications.
Prediabetes	***Impaired Fasting Glucose (IFG)*** FPG ≥100 and <126mg/dl (5.6-6.9 mmol/l)	No guidelines for interpreting CPG=140-199 mg/dl. Follow-up FPG to be considered.	***Impaired Glucose Tolerance (IGT)*** 2hPG ≥140 and <200 mg/dl (7.8-11.0 mmol/l)	Both IFG and IGT are risk factors for future diabetes and cardiovascular disease. Modest weight loss and regular physical activity can reduce the rate of progression of IGT to type 2 diabetes.
Normal	FPG <100 mg/dl (5.6mmol/l)		2hPG <140 mg/dl (7.7mmol/l)	

1 Fasting is defined as no caloric intake for at least 8 hr.
2 Casual is defined as any time of day without regard to time since last meal.
3 OGTT should be performed using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water. The OGTT is not recommended for routine clinical use, but may be necessary when evaluating patients with IFG or when diabetes is still suspected despite an FPG<126

2. Consider testing for diabetes in asymptomatic adult individuals:

At age 45 years and above, particularly in those with a BMI ≥25 kg/m2 (or with waist circumference >88 cm in women, or >104 cm in men). If normal, repeat at 3-year intervals.

At a younger age in individuals who are overweight (BMI >25 kg/m2) and **have additional risk factors**:

- are habitually physically inactive
- have a first-degree relative with diabetes
- are hypertensive (≥140/90 mmHg)
- have a history of vascular disease
- on previous testing, had IGT or IFG
- have an HDL cholesterol level <35 mg/dl (0.90 mmol/l) and/or a triglyceride level >250 mg/dl (2.82 mmol/l)
- have Polycystic Ovary Syndrome
- have delivered a baby weighing >4kg

B. DIABETES CARE

3. Summary of recommended goals for adults with diabetes

Glycemic control goals			Blood pressure	Lipids			Key concepts in setting glycemic goals:
HbA1c	Pre-prandial (Fasting) Plasma Glucose	Peak 2-hour postprandial plasma glucose		LDL	Triglycerides	HDL	• HbA1c is the primary target for glycemic control • Goals should be individualized: children, pregnant women, and elderly require special considerations • More stringent glycemic goals (HbA1c, <6%) may further reduce complications at the cost of increased risk of hypoglycemia • Less intensive glycemic goals may be indicated in patients with severe or frequent hypoglycemia
<7.0%	90–130 mg/dl (5.0–7.2mmol/l)	<180 mg/dl (<10.0 mmol/l)	<130/80 mmHg	<100 mg/dl (<2.6 mmol/l)	<150 mg/dl (<1.7 mmol/l)	>40 mg/dl (>1.0 mmol/l)	

4. Correlation between HbA1c level and mean plasma glucose levels

Mean plasma glucose mg/dl	135	170	205	240	275	310	345
HbA1c (%)	6	7	8	9	10	11	12

5. Type 2 Diabetes Care

	Action	Initial	Every follow-up	Every 6 months	Yearly	Description / Comments
	Mean plasma glucose mmol/l 7.5 9.5 11.5	13.5	15.5	17.5	19.5	
History	Onset, continuance	+		+		Age and characteristics of onset of diabetes; symptoms' dynamics.
	Nutritional status	+				Eating patterns, weight history, growth and development in children/adolescents
	Treatment review		+			Review of previous treatment programs. Current treatment, incl. meds, meal plan.
	Physical activity	+	+			Review current physical activity and exercise history
	Hyperglycemic episodes		+			DKA frequency, severity, and causes
	Hypoglycemic episodes		+			Any severe hypoglycemia: frequency, severity, and causes
	Vascular complications			+		History of complications: eye, kidney, CVD, peripheral arterial disease.
Physical examination	Skin examination	+		+		Examine for acanthosis nigricans and insulin injection sites.
	Height and Weight	+		+		Moderate weight loss if appropriate: increase physical activity and improve diet.
	Blood pressure	+	+			If SBP >140 or DBP >90 mm Hg initiate measures to lower. Goal BP < 130/80.
	Dilated Eye Exam				+	Refer to ophthalmologist for Fundoscopic Exam.
	Foot Exam	+		+		Visual exam w/o shoes and socks.
	Lower Extremity Sensory Exam			+ (1)	+	Teach protective foot behavior if sensation diminished.
	Peripheral pulse exam	+		+		Palpation of Dorsalis Pedis and Posterior Tibial pulses
	Dental Exam				+	Refer to dentist
	Thyroid palpation	+			+	Refer to thyroid function tests if indicated
Laboratory monitoring	Fasting/casual blood glucose	+	As indicated			Goal FBS <126 mg/dl (<7.0 mmol/l)
	HbA1c			+ (2)		Goal <7.0%. Goal at A1C of <6% can be considered in individual patients and during pregnancy.
	Fasting Lipid Profile (if not available - total cholesterol)	+			+ (3)	Goal LDL <100 mg/dl.
	Urine Microalbumin/Creatinine	+			+	Initial urinalysis at diagnosis, then annual microalbumin. If abnormal, recheck x2 in a 3-month period.
	Serum Creatinine				+	
	Liver function tests	As indicated				
	EKG	+			+	If patient is >40 years old or DM>10 years
Treatment	Review Treatment Plan	+	+			Check diet, exercise, and meds.
Referrals	Consider for referral	Newly diagnosed diabetics. If insulin therapy required		Targets not met Complications		HTN or raised lipids difficult to control. Protracted vomiting /ketonuria Diabetic now pregnant
Councelling	Nutrition Plan	+	+			Counsel on diet
	Physical Activity Plan	+	+			Assess and prescribe based on patient's health status. Educate regarding exercise
	Tobacco Use	+	+		+	Assess readiness/counsel on smoking cessation. If quit, encourage maintenance.
	Foot care	+	+			Educate regarding daily foot checks and good foot care
	Preconception/Pregnancy	+	+			Need for tight glucose control 3-6 months preconception. Consider early referral.

(1) Every 3-6 months if high-risk foot conditions

(2) For stable glycemic control- 2x/yr. If change in therapy or if not meeting glycemic goals -4x/yr)

(3) If values fall in lower risk levels, assessment may be repeated every 2 years)

C. TREATMENT APPROACH

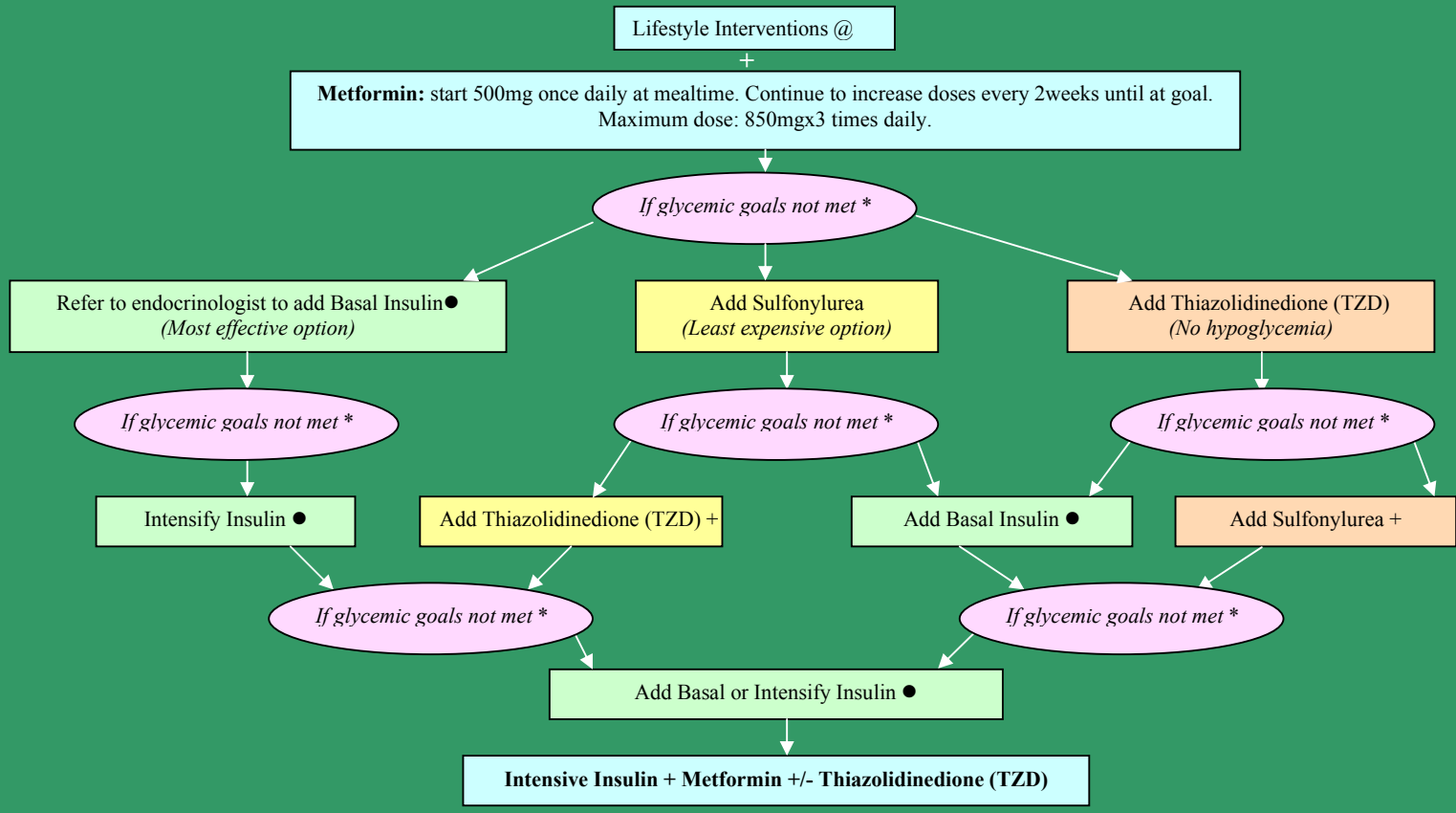
Early intervention with metformin in combination with lifestyle changes with continuing, timely augmentation therapy with additional agents (including early initiation of insulin therapy) as a means of achieving and maintaining recommended levels of glycemic control are highlights of the treatment approach.

6. Lifestyle interventions

Diet	Weight	Smoking	Physical activity
Less saturated fats and simple carbohydrates. More complex /whole-grain carbohydrates (bread, potatoes, rice, cereals). More vegetables and fruits, avoiding sucrose-containing fruits. Reduce portion-size. More low fat dairy products. Less fried and fatty food. Reduce salt and alcohol intake	If overweight (BMI >25 kg/m2, or waist circumference >88 cm in women and >104 cm in men) - moderate weight loss (~7% of body weight). Goal - normal body weight (BMI= 18.5–24.9kg/m2).	Smoking cessation	Regular moderate-intensity aerobic physical activity /exercise (e.g., brisk walking) at least 150 min/week, distributed over at least 3 days per week and with no more than two 2 consecutive days without physical activity.

7. Lifestyle Interventions

Pharmacotherapy is started after 4-12 weeks if an individualized diet, activity, and weight loss trial (if needed) have failed to control blood glucose.
Sulfonylureas, biguanides, thiazolidinediones, meglitinides and alpha glucosidase inhibitors are all used for monotherapy. If monotherapy fails to control blood glucose, combination therapy or insulin may be used.
If combination therapy fails, *insulin* is the next line of treatment



@ Reinforce lifestyle interventions at every visit.

* See the section 3 of this job aid: "Summary of recommended goals for adults with diabetes". **If goals are met – follow up.**

\+ Although three oral agents can be used, initiation and intensification of insulin therapy is preferred based on effectiveness and expense.

● Early initiation of insulin would be a safer approach for individuals presenting with weight loss, more severe symptoms and glucose values >250–300 mg/dl.Lifest

7.1. Main Classes of oral Anti-diabetes Medications

BIGUANIDES	SULFONYLUREAS	MEGLITINIDES	THIAZOLIDINEDIONES (TZDs)	ALPHA GLICOSIDASE INHIBITORS
Primary action is decreasing glucose output/production from the liver. Do not stimulate insulin release.	Stimulate the pancreas to make more insulin. Over time, the body's ability to make insulin may lessen. Then, these drugs lose their ability to control blood glucose.	Similar mechanism of action as the sulfonylureas - insulinotropic. May be used as monotherapy or in combination with metformin or a tthiazolidinedione. May cause hypoglycemia.	Increase peripheral and hepatic sensitivity to insulin. Are used as single agents or in combination with insulin, metformin, or sulfonylureas. Do not cause hypoglycemia if used as monotherapy.	Delay carbohydrate digestion and slow absorption. Do not cause hypoglycemia if used as monotherapy. Are used to treat post-prandial hyperglycemia. Law/not effective in the treatment of significant fasting hyper-glycemia.

7.2. Comparison of oral Anti-diabetes Medications

	Biguanides	Sulfonylureas	Meglitinides	Thiazolidinediones (TZDs)	α-Glucosidase Inhibitors
Change in A1C (%)	1.5-2.0	2.0-2.5	0.7-1.0	0.5-2.0	0.5-0.8
Onset of action	Slow dose titration	Fast	Fast	Slow mode of action	Slow dose titration
Lipid effect	Favorable	Neutral	Neutral	Favorable	
Hyperinsulinemia	Decrease↓↓	Increase↑↑↑	Increase↑↑	Decrease↓↓↓	Neutral
Cardiovascular	Improved	Uncertain	Unknown	Improved (small studies)	Improved
Weight gain	No	Yes	Yes	Yes	No
Hypoglycemia	No	Yes	Yes (uncommon)	No	No
Long term safety	Yes	Yes	No	No	No
Requires monitoring	Renal function	Hypoglycemia	Hypoglycemia	ALT at baseline, then periodically as indicated	Liver function with high doses
Use in organ failure					
Renal	Contraindicated	Caution	Yes	Yes	Yes
Hepatic	Contraindicated	Caution	Yes	Contraindicated	Relative contraindication
Heart	Contraindicated	Caution	Caution	Contraindicated	Yes
Common side effects	Abdominal pain, diarrhea, flatulence	Hypoglycemia	Hypoglycemia	Weight gain, fluid retention, heart failure	Abdominal pain, diarrhea, flatulence
Serious side effects	Lactic acidosis	Hypoglycemia	Hypoglycemia	Hepatotoxicity	None
Preservation of ß-cell function	Possible	No	Possible	Possible	Neutral

7.3. Oral Anti-diabetes Medications

CLASS	GENERIC NAME	TRADE NAME	DOSAGE (mg) (total daily)	COMMENTS Regular testing of blood glucose and A1C is recommended to assess medication effect
First Generation Sulfonylureas	tolbutamide 500 mg tolazamide 100, 250, 500 mg acetohexamide 250, 500 mg	Orinase Tolinase Dymelor	500-3000 100-1000 250-1500	All sulfonylureas may cause hypoglycemia. Least potent. Short half-life, useful in renal disease.
	chlorpropamide 100, 250 mg	Diabinese	100-500 (Avg. 250)	Longest duration. Caution with elders with renal disease. Alcohol may cause Antabuse-like reaction. Can cause hyponatremia.
Second Generation Sulfonylureas	glibenclamide	Maninil, Daonil	1,75-20	Highly potent. Give 30- 60 min before meal in 2-3 doses/day. Avg. daily dose 2,5-15mg.
	gliclazide	Diabeton, Diamicron, Predian	80-320 (Avg. 160)	High pancreatic β-cell selectively. Positive hemovascular properties, antioxidant effect. Preferred in patients with CVD. Give in 1-2 doses/day. Usually given with meal- breakfast and supper.
	glipizide 5, 10 mg	Glucotrol Minidiab	2.5-40 (Avg. 10)	Take on an empty stomach 30 minutes before meal, in 1-2 doses/day. Lowest incidence of hypoglycemia. No Antabuse-like reaction. Dosage twice daily.
	glipizide extended release 2.5, 5, 10 mg	Glucotrol XL	5-20 (Avg. 5-10)	Therapeutic benefits last for 24 hours. Given once per day. Consider splitting large doses twice daily. Low toxicity. Useful in renal dysfunction. Use caution with elderly.
	glyburide 1.25, 2.5, 5 mg	Micronase, Diabeta	1.25-20 (Avg. 7.5)	No Antabuse-like reaction. Highly potent, low toxicity. Once daily with breakfast or the first main meal. Use caution with elderly.
	glyburide (micronized) 1.5, 3, 6 mg	Glynase PresTab	0.75-12 (Avg. 7.5)	No advantage over the non-micronized products.
	glimepiride 1, 2, 4 mg	Amaryl	1-8 (Avg. 2-4)	Dosage once daily. Take with 1st main meal.
Meglitinides	repaglinide 0.5, 1, 2 mg	Prandin	1-16	Dosage 3 times daily. Must be taken 15 to 30 minutes before meals. May cause hypoglycemia. Patients who skip a meal should also skip that dose of medication to reduce the risk of hypoglycemia. Use with caution in chronic liver disease. Should not be added to regimens of patients who have not been adequately controlled by glyburide or other insulin secretagogues, nor should these patients be switched to nateglinide.
	nateglinide 60, 120 mg	Starlix	180-360	
Alpha Glucosidase Inhibitors	acarbose 25, 50, 100 mg	Precose Glucobay	25-300 (Avg. 50-100)	Take with first bite of food. Divide into 3 doses/day *with* meals. Most common side effect is excessive flatulence, diarrhea, and abdominal pain. Initiate medication slowly to decrease GI effects. Contraindicated in DKA, inflammatory bowel disease, colonic ulceration, or partial intestinal obstruction.
	miglitol 25, 50, 100 mg	Glyset	25-300	
Biguanides	metformin 500, 850, 1000 mg	Glucophage	500-2550	No hypoglycemia if used as monotherapy. Take with food to lessen gastrointestinal side effects. Divide into 2-3 doses/day with meals. Do not use with impaired renal or hepatic function. Discontinue for surgical and I/V contrast dye procedures.
	metformin extended release 500 mg	Glucophage XR	500-2000	
Thiazolidine-diones	rosiglitizone 2, 4, 8 mg	Avandia	4-8	Administered without regard to food. Monitor for signs of congestive heart failure at 6 weeks and 3 months. Use with caution in hepatic disease. Monitor baseline ALT when initiating therapy, then periodically as indicated. May increase HDL and LDL levels.
	pioglitizone 15, 30, 45 mg	Actos	15-45	
Combined medications	glyburide/metformin 1.25/250 mg, 2.5/500 mg, 5/500 mg	Glucovance	1.25/250-20/2000	Sulfonylurea/metformin combinations can be used as initial or second-line therapy. Titrate slowly. Administer with food. May cause hypoglycemia. Major side effects are GI symptoms. Lactic acidosis may occur, therefore it is contraindicated in patients with renal insufficiency, chronic metabolic acidosis, or CHF. Temporarily discontinue for surgery or for radiology procedures involving

7.4. Insulin

INSULIN TYPE	ONSET	PEAK	DURATION	COMMENTS *Regular testing of blood glucose and A1C is recommended to assess effect.*
Very Short-Acting Insulin lispro Humalog (Lilly) Novolog	0-15 minutes	30-90 minutes	2-4 hours	Insulins lispro, aspart, and glulisine are very short acting products. Both lispro and aspart are available mixed with protamine as fixed-ratio combinations, which provide the benefit of rapid and intermediate action. Humalog mix 75/25 is a mixture of 75% insulin lispro protamine suspension and 25% insulin lispro. NovoLog 70/30 is a mixture of 70% insulin aspart protamine and 30% insulin aspart.
Insulin aspart NovoLog (NovoNordisk)	10-20 minutes	60-180 minutes	3-5 hours	
Insulin glulisine Apidra (Sanofi-Aventis)	10-20 minutes	60-120 minutes	3-4 hours	
Short-Acting Regular insulin (Humulin R) Actrapid	 30 minutes-1 hour 15-30 minutes	2-4 hours	 4-8 hours 6-8 hours	NPH and regular insulins are also available as fixed-ratio combinations of 50/50 and 70/30.
Intermediate-Acting NPH Insulin Lente Insulin Monotard Unsulatard	 2-4 hours 30-45 minutes	4-10 hours	 10-16 hours 12 hours	NPH and regular insulins are also available as fixed-ratio combinations of 50/50 and 70/30.
Long-Acting Insulin glargine Lantus (Aventis) Levemir	4-6 hours	No pronounced peak	18-24 hours	Insulin glargine (Lantus) is indicated for once daily subcutaneous administration at a consistent time in patients who require basal (long-acting) insulin for the control of hyperglycemia. Insulin glargine (Lantus) must NOT be diluted or mixed with any other insulin or solution, and is not intended for intravenous administration.
Ultralente Ultratard	4-6 hours	8-20 hours	24-28 hours	

The degree of glucose lowering is dose-related. Total daily insulin doses for type 2 diabetes may range from 0.4-1.2 U/kg/day. In insulin-resistant patients, doses of >1.5 U/kg/day may be required. Individuals with severe type 2 diabetes or those who have proved not responsive to the above-mentioned regimens may require the addition of short-acting insulin before meals.

8. Treatment of hypoglycemia

Hypoglycemia must be treated quickly because within minutes it can become severe, leading to increasing confusion, coma, and rarely permanent brain injury. The symptoms of hypoglycemia are usually relieved within minutes of consuming one of the following rapid-acting glucose sources, providing 15grams of carbohydrates: 5-6 hard candies; ½ glass of fruit juice or regular (non-diet) soft drink; 1 glass of milk (which contains lactose). All insulin-requiring individuals should be instructed to carry at least hard candies to be eaten in the event of a hypoglycemic reaction. The person with hypoglycemia may benefit from consuming sugar followed by a food that provides longer-lasting carbohydrates (such as bread or crackers). When hypoglycemia is severe or prolonged and taking sugar by mouth isn't possible, glucose should be given intravenously to prevent serious brain damage.

9. Long-term Complications and Risks

- ✓ Retinopathy → blindness
- ✓ Nephropathy → renal failure

- ✓ Neuropathy → foot ulcer → infection → amputation
- ✓ High risk cardiovascular, peripheral-vascular and cerebrovascular disease.

Blood pressure control

- Measure blood pressure (BP) at every clinic visit.
- Consider secondary causes of raised BP (renal disease, electrolyte disturbance, other).
- Aim to maintain BP below 130/80 mmHg. Revise individual targets upwards if there is significant risk of postural hypotension and falls.
- For those with a SBP of 130-139 mmHg or a DBP of 80-89 mmHg initiate a trial of lifestyle modification alone for 3 months, aiming to reduce calorie intake, salt intake, alcohol intake, and inactivity. Patients with SBPs >140 mmHg or DBPs >90mmHg should receive both antihypertensive medication as well as lifestyle changes.
- Initiate antihypertensive medication, except for α-adrenergic blockers, titrating dose according to response. Add further drugs if targets are not reached on maximal doses of current drugs.
  - ✓ All patients with diabetes and hypertension should be treated with ACE inhibitors or ARBs if ACE inhibitors are not tolerated. Add a thiazide diuretic if needed to reach target BP. Monitor renal function and serum potassium levels when using these antihypertensives.
  - ✓ Start with β-blockers in people with angina, β-blockers or ACE-inhibitors in people with previous myocardial infarction, ACE-inhibitors or diuretics in those with heart failure.
  - ✓ Care should be taken with combined thiazide and β-blockers because of risk of deterioration in glycemic control.

Cardiovascular risk protection

- Attention to reducing modifiable cardiac risk factors and aggressive treatment of diabetic dyslipidemia.
- Annual testing for lipid disorders. Lipid targets: LDL cholesterol <2.5 mmol/l (<95 mg/dl), triglyceride <2.3 mmol/l (<200 mg/dl), and HDL cholesterol >1.0 mmol/l (>39 mg/dl).
- If abnormal lipid profile, ensure lifestyle changes (nutrition therapy, increased physical activity, smoking cessation, and weight loss if indicated).
- Active management of the blood lipid profile:
  - ✓ drugs of choice: statins at standard dose for all >40 years old (or all with declared CVD) and for all >20 years old with microalbuminuria.
  - ✓ statin + fenofibrate where serum triglycerides are >2.3 mmol/l (>200 mg/dl).
  - ✓ consider other lipid-lowering drugs (ezetimibe, nicotinic acid, omega-3 fatty acids) in those failing to reach lipid targets or intolerant of conventional drugs.
- Reassess at all routine clinical contacts to review achievement of lipid targets.
- Provide aspirin 75-100 mg daily (unless aspirin intolerant or BP uncontrolled) in people with evidence or high risk of CVD.
- Consider an ACE inhibitor for patients >55 years of age with one cardiovascular risk factor (independent of hypertensive status).
- Consider a β-blocker for patients with a prior myocardial infarction.
- Refer early for specialist investigation those with symptomatic peripheral arterial disease, coronary artery disease and carotid disease.

Eye screening

- Ensure eye examination at the time of diagnosis and then annually:
  - ✓ measure and document visual acuity,
  - ✓ assess retinopathy by an appropriately trained healthcare professional, or an ophthalmic specialist
  - ✓ refer to an ophthalmologist if not making the examination.

- Classify the findings of eye exam as requiring:
  - Routine annual (12 months) review - if no retinopathy.
  - Earlier review (3 to 6 months) - if worsening since last examination.
  - More frequent reviews - in pregnancy.
  - Referral to an ophthalmologist:
    - ✓ the same day: if sudden loss of vision, evidence of retinal detachment,
    - ✓ within 1 week: if evidence of pre-retinal and/or vitreous hemorrhage,
    - ✓ within 1-2 months: if advanced retinal lesions, unexplained deterioration of visual acuity, macular oedema, cataract, unexplained retinal findings, inability to visualize fundus.

- Advise that good control of blood glucose, blood pressure, and blood lipids can help to reduce the risk of eye damage.

- Advise that diabetic retinopathy is not a contra-indication for use of aspirin if this is indicated for prevention of CVD.

Kidney damage

Check annually for proteinuria in a morning urine sample using a dipstick.

If dipstick test positive

- Check for urinary tract infection
- obtain a laboratory urine protein/creatinine ratio (PCR)

If dipstick test negative

- Check laboratory urine albumin/creatinine ratio (ACR)

If PCR or ACR is raised (microalbuminuria ACR >2.5mg/mmol in men, >3.5 mg/mmol in women), repeat twice over the following 4 months.

If both repeat tests are not raised, check again annually.

Confirm as positive if proteinuria or raised urine albumin on two of three occasions.

Measure serum creatinine annually, and calculate GFR('eGFR').

If reduced eGFR (<90 ml/min/1.73 m2 and falling)

Manage those with ↑ urine albumin or proteinuria or ↓ eGFR as follows:
- ✓ Use ACE-inhibitor or ARB titrated to maximum tolerated dose,
- ✓ Intensify management of blood pressure (target <130/80 mmHg),
- ✓ Intensify management of blood glucose (target HbA1c <6.5 %),
- ✓ Monitor progression by ACR or PCR, serum creatinine and potassium; calculate eGFR,
- ✓ Advise limiting protein intake to 0.8 g/kg daily if proteinuric,
- ✓ Intensify other protection measures (not smoking, aspirin therapy, lipid-lowering therapy).
- ✓ Refer to a nephrologist when eGFR <60 ml/min/1.73 m2, or earlier if symptomatic or biochemical or fluid retention problems occur.
- ✓ Measure Hb every 6 months if eGFR <90 ml/min/1.73 m2, give iron if indicated, and refer to nephrologist if still anemic (Hb <12 g/dl).

Foot care

- Assess feet as part of an annual review:
  - ✓ history (previous peripheral arterial disease, foot ulceration or amputation),
  - ✓ foot deformity; visual evidence of neuropathy (dry skin, callus, dilated veins) or ischemia; nail deformity or damage,
  - ✓ palpation of foot pulses (dorsalis pedis and posterior tibial).
- Provide foot-care education according to individual need and risks.
- Classify and manage according to findings:

No added risk
Intact sensation, no signs of peripheral arterial disease, no other risk factor.
→ Provide foot-care education.

At risk
Diminished sensation or other single risk factor.
→ Regular review 6-monthly. At each review:
- ✓ inspect both feet, palpate pulses,
- ✓ evaluate footwear,
- ✓ provide advice, enhance foot-care education.

High risk
Loss of sensation + foot deformities or absent pedal pulses; Previous ulceration or amputation.
→ Review every 3 months. At each review:
- ✓ inspect both feet, palpate pulses, provide local interventions as indicated.
- ✓ evaluate footwear - provide advice and special footwear if indicated.
- ✓ consider need for referral.
- ✓ provide intensified foot-care education.

Foot ulceration or infection
Foot ulcer present.
→ Refer to foot-care specialist within 24 hours.

- Do not amputate unless:
  - ✓ a detailed vascular evaluation has been performed by the specialist
  - ✓ ischemic rest pain cannot be managed by analgesia or revascularization
  - ✓ a life-threatening foot infection cannot be treated by other measures
  - ✓ a non-healing ulcer is accompanied by a higher burden of disease than would result from amputation.

HEIGHT IN METRES	BODY MASS INDEX (WEIGHT IN KILOGRAMS)																	
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
1.50	45	47	50	52	54	56	59	61	63	65	68	70	72	74	77	79	81	83
1.55	48	51	53	55	58	60	63	65	67	70	72	75	77	79	82	84	87	89
1.60	51	54	56	59	61	64	67	69	72	74	77	79	82	85	87	90	92	95
1.65	54	57	60	63	65	68	71	74	76	79	82	84	87	90	93	95	98	101
1.70	58	61	64	67	69	72	75	78	81	84	87	90	93	95	98	101	104	107
1.75	61	64	67	70	74	77	80	83	86	89	92	95	98	101	104	107	110	113
1.80	65	68	71	75	78	81	84	88	91	94	97	100	104	107	110	113	117	120
1.85	69	72	75	79	82	86	89	92	96	99	103	106	110	113	116	120	123	127
1.90	72	76	79	83	87	90	94	98	101	105	108	112	116	119	123	126	130	134
1.95	76	80	84	88	91	95	99	103	107	110	114	118	122	126	129	133	137	141
	HEALTHY						OVERWEIGHT					OBESE						

* This job aid has been developed for family physicians in the Republic of Armenia. The materials herein have been adapted from the **Position Statement on the Standards of Medical Care in Diabetes,** *American Diabetes Association 2007*; the **Massachusetts Guidelines for Adult Diabetes Care** *2005*; **Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia** : *report of a WHO/IDF consultation, 2006*; **Global Guideline for Type 2 Diabetes**, *International Diabetes Federation (IDF) 2005;* and the ROA Ministry of Health Guidelines on Type II Diabetes Management.

Section VII.

PATIENT SATISFACTION FEEDBACK IN PRIMARY HEALTH CARE FACILITIES

Objective:

Continuous improvement of the Quality of Primary Health Care through monitoring of patients' satisfaction and undertaking adequate measures for improvement.

Baseline clarifications

1. Quality of care is a multi-dimensional phenomenon that includes various aspects of provided care. Patients can appropriately assess some aspects of health care, reflecting their own individual perceptions and attitude.
2. Different methods need to be considered and combined when assessing quality of care in primary healthcare. Assessment of the technical quality of care should not rely on patient-based assessments alone, as they may substantially differ from the technical (e.g., record or observation based) measures of quality. However, patient perception of the quality of care is very important.
3. Patient satisfaction with received care may be regarded and applied as one component in comprehensive assessment of healthcare quality.

General provisions:

4. Patient satisfaction surveillance is a regular and continuous process, in which all the PHC facilities may participate.
5. Administration/management of PHC facilities is the primary responsible for ensuring surveillance of patient satisfaction in the given facility.
6. For the purpose of enhancing unbiased approach to the patient satisfaction surveillance, no reporting out of facility is required on its' results: results are used intra-organizationally. The results of patient satisfaction and related Action Plans will, however, be available to the authorized visiting supervisors to monitor that the tool is being used and the action plans are being implemented.
7. Patient satisfaction assessment should be performed according to the principles of voluntariness, anonymity and confidentiality of patients' private and medical information.

Procedures for obtaining Patient Satisfaction Feedback:

8. Obtaining feedback about Patient Satisfaction in PHC facilities may be conducted using one of three methods:
    - patient satisfaction by using a structured survey tool (questionnaire);
    - routine review of patient complaints recorded in Record Book
    - patient suggestion box in entry or exit of facility

9. The Quality Improvement Board at the facility level (*see Section II*) coordinates, supervises the process and analyzes the results of patient satisfaction feedback in PHC facility (or group of facilities) under its authority.
10. The Board nominates a Board member (or members) responsible for conducting patient satisfaction feedback based on the principles of voluntariness and anonymity.
11. At least 5% of patients who have visited the given facility for each quarter should be contacted and asked if they would participate by completing the structured satisfaction survey tool (questionnaire).
12. The person responsible for obtaining feedback by the patient satisfaction questionnaire hands over and collects back the filled-in Survey Questionnaires *(see page 58 in this Section)*, summarizes and draws up preliminary report on the survey results *(see Summary form on the page 60 in this Section)*, and presents these results along with filled-in questionnaires to the Board.
13. On a quarterly basis, the Board analyzes the surveys' findings, draws conclusions and suggests appropriate interventions for addressing the registered issues.
14. Each PHC facility will keep a special Log/Record Book for Patients' comment *(see page 61 in this Section,)* where all entering data and the content of complaint, as well as its consideration process and outcome/results are registered.
15. Suggestion boxes should be placed in all PHC facilities accessible and visible to all patients. Responsibility for managing, summarizing and analyzing the suggestion boxes' content is assigned by an order of the facility director.
16. Quarterly, the Board informs the staff of PHC facility (or group of facilities) under its authority about the results of patient satisfaction feedback.

Patient Satisfaction Feedback QUESTIONNAIRE

Facility name_____ Date: _____/ _____/_____
Day *Month* *Year*

Dear client,

Your participation in this study is voluntary. However, we would very much appreciate it if you would spend a few minutes to answer the questions below. It will help us to improve the quality of primary health care provided to your community. The information you give us will be confidential, which means that your name will not be mentioned anywhere and the information provided by you will be presented only in a summarized form. It is very important that you respond honestly. Please, carefully read each question and using the rating scale of 1-5 (unacceptable to excellent) mark the box that best represents your opinion about your visit to the primary health care facility.

Rating Scale 5: Excellent; 4: Above average; 3: Good/OK; 2. Poor; 1. Unacceptable.

1. Do you think that during your last visit to the clinic, the provider (doctor or nurse):

	5	4	3	2	1
a. Was really attentive and respectful to you?	☐	☐	☐	☐	☐
b. Had enough time to answer my questions?	☐	☐	☐	☐	☐
c. Gave complete explanations?	☐	☐	☐	☐	☐
d. Seemed organized and calm?	☐	☐	☐	☐	☐
e. Appeared to be skillful?	☐	☐	☐	☐	☐
f. Explained things in an understandable manner?	☐	☐	☐	☐	☐
g. Made me feel free to ask questions?	☐	☐	☐	☐	☐
h. Discussed with me my treatment options?	☐	☐	☐	☐	☐

2. How would you assess the cleanliness of the clinic?

5	4	3	2	1
☐	☐	☐	☐	☐

3. How would you assess the clinic conditions (renovation, equipment, supplies during last visit?

5	4	3	2	1
☐	☐	☐	☐	☐

See cont. on the next page

4. Was the following true for your last visit to the clinic?

a. Did you have to wait too long before receiving care? ☐ 0. Yes ☐ 2. No

b. You could afford to buy the medicines recommended for your treatment?

☐ 2. Yes ☐ 0. No

5. During your last visit, did the provider give you any material for reading about your health problem?

☐ 2. Yes ☐ 0. No

6. Would you return to the same provider if you had a similar problem?

☐ 2. Yes ☐ 0. No ☐ NS/Not sure

7. Would you recommend the same provider to your friends and relatives?

☐ 2. Yes ☐ 0. No ☐ NS/Not sure

8. Overall, how would you assess the care you received in the clinic during your last visit?

5. Excellent ☐ 4. Above average☐ 3. Good/OK☐ Poor☐ 1. Unacceptable☐

9. What could be done to improve the quality of care at this PHC facility? Please write your suggestions below.

Please provide your: **a. Age.** _____ **b. Gender.** ☐ 1. female ☐ 2. male

c. Education. ☐ Not completed high school (<10 years) ☐ High school (10 years) ☐ College (10-13 years) ☐ University

Thank you for participating in this survey and providing us your feedback!

(Please do NOT fill below this line)

1 (a+b+c+ d++e+f+ g+h) 5 x 8 = 40pts max.	2 5pts max.	3 5pts max	4 (a+b) 2x2= 4max	5 2 max	6 2 max	7 2 max	8 5p max.	TOTAL Score (1+2+3+ 4+5+6+7 +8)	MAXIMUM possible score = 65 points (40+5+5+4+ 2+2+2+5)	Patient Satis-faction INDEX (% of Total score out of Maximum possible score)
									65	**____ %**

Patient Satisfaction Feedback Survey SUMMARY

(Quarterly)

Facility name_____
Quarter: _____ Year _____

Table 1. **Patient satisfaction Indexes**

	Patient Satisfaction INDEX	Number of patients	Percentage out of total number of patients
1.	< 55% - Unsatisfied		
2.	= 55 – 74% - Somewhat satisfied		
3.	> 75%		
	TOTAL		

Table 2. **Patient suggestions for the improvement of care**

The most important measures to improve the services*	**% (n)**
1.	**___% (____)**
2.	**___% (____)**
3.	**___% (____)**
4.	**___% (____)**
5.	**___% (____)**

** See p.9 of the questionnaire*

10. Other responses not included in the main list of options:

_____
_____
_____
_____
_____
_____
_____

Signature _____

Name and position _____

Date: _____/_____/_____

Model RECORD BOOK for Patients comments/concerns

#	Date	Patient name, address, phone#	Content of the Comment/Concern	Responsible for processing a concern	Result (date, comments)

Section VIII.

SUPPORTIVE SUPERVISION ACTION PLAN FOR QUALITY ASSURANCE

_____ *(year)*

Name(s) and type(s) of PHC facility (facilities)
Chairperson of the Quality Improvement Board *(name & title)*
Board members present at meeting *(list)*
Date of the Board meeting # of Protocol of the meeting

Quarter #	Issue/ Question #	Revealed by means of SR, ISA, MCR or PSS*	Problem / Issue / Identified Gap	Root Cause(s)	Solutions / Actions / Next steps	Responsible person(s)	Deadline	Status of Resolution (not started, in progress, completed - date)

* **SR** – statistical reports; **ISA –** Internal (Self-) Assessment; **MCR** – Medical chart/case review; **PSS** – Patient Satisfaction Surveillance

See cont. on the next page

Quarter #	Issue/ Question #	Revealed by means of SR, ISA, MCR or PSS*	Problem / Issue / Identified Gap	Root Cause(s)	Solutions / Actions / Next steps	Responsible person(s)	Deadline	Status of Resolution (not started, in progress, completed - date)

Signatures	*Chairperson*	*Members*