Project

Strengthening Management of Diabetes and Hypertension in Primary Health Care in Georgia

FINAL REPORT

July – September

2021

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The project rationale

In March 2021, Georgian Government announced beginning fundamental reform of Primary Healthcare System in Georgia, that will improve the quality and reliability of primary health care services. Primary health care should become and will be a pillar for the healthcare system. This will allow Georgian Government to achieve universal Healthcare coverage goals that is a top priority for achieving Sustainable Development Goals by the end of 2030. Substantial reform will be implemented gradually over the years, which will significantly improve the access of Georgian citizens to quality primary health care services. It will be a real support for people with chronic diseases and should remove financial barriers to high quality healthcare. The main goals of the updated primary health care package are: to expand the use of digital health care services, to strengthen primary health care as a first line of contact, to increase the role of the family nurse, to assess individual risk and to manage chronic diseases, In particular, the introduction of educational and counseling services for better management of the patient.

A special place in the reform will be given to the control of Non-communicable Chronic Diseases which are the main burden for the morbidity and mortality in Georgia.

The probability of dying prematurely (30-70 years) from the four main non-communicable diseases (NCDs)[1] is 16.7% on average within the WHO European Region but rates are high towards the east of the Region, and twice as high for men as women in some countries. The main driver of inequality in NCD premature mortality is excess male cardiovascular diseases mortality. The management of NCDs in primary care of Georgia remains a challenge. For example, the number of patients who called an ambulance doubled – from 768 000 in 2008 to 1 463 000 in 2018[2]; there is no systematic approach to professional development and quality improvement loops are missing in most facilities[3].

According to the strategic plans, within the framework of state programs, continuous measures are taken to improve the control, prevention, diagnosis and treatment of non-communicable diseases (NCDs), which will provide appropriate services to high-risk groups and the general population, as well as universal access to medicines.

The new model of primary health care reform lays the foundations for non-communicable disease management and quality improvement, and includes important motivational mechanisms.

The implementation of this reform should take into account both clinical and management aspects of primary health care delivery, including the required competency testing and compliance with the new primary health care model to ensure model sustainability.

[1] Cardiovascular disease, diabetes mellitus, chronic respiratory disease, cancer.

[2] Health Care Georgia, Statistics Yearbook. 2018

[3] https://www.euro.who.int/__data/assets/pdf_file/0003/373737/geo-qocphc-eng.pdf

It is important to implement not only training activities, but also to bring compulsory continuing medical education, updated evidence-based protocols and competencies, and to increase the role, autonomy and competencies of primary care team members, including nurses; Strengthen organizational and personal management capabilities, identify and implement performance appraisals and accountability mechanisms for primary care providers, and regularly review the integration of evidence-based recommendations into clinical practice, of course with feedback from experience.

Project highlights:

With the support of the project will be:

- Assessed training needs (digital health/technology, change management, protocols) of PHC providers to be prepared for full-scale implementation of PHC reform;
- Assessed what data are currently available to support performance of PHC professionals in CVD risk stratification, prevention and management of hypertension and diabetes;
- Assessed current practice of analysis, feedback and use of data for quality improvement, incentives and monitoring of PHC performance at the selected PHC facilities;
- Conducted Training of trainers: Initiate training up to 20 Master trainers in delivery of priority services.

Project goal:

Improving management of Hypertension and Diabetes at PHC level of Georgia

The Project objectives are as follows:

1. Promoting a series of webinars (3-4) for the implementation of diabetes management tools and the exchange of country experience - diabetic retinopathy screening, therapeutic education and other relevant topics;
2. Establish a roadmap of stakeholders, existing activities related to hypertension and diabetes, programs and related training materials (clinical and patient education);
3. Creating a Patient Referral Pathways for local facilities and PHC staff based on updated and approved national protocols to facilitate their implementation in PHC;
4. Develop a multidisciplinary curriculum and training materials in accordance with approved clinical protocols, algorithms and guidelines;
5. Creating educational materials in hypertension and diabetes for patient education purposes;
6. Identify key performance indicators to monitor the quality of management of diabetes and hypertension in PHC;
7. Train at least 20 master trainers to review and interpret clinical audits' results on management of diabetes and hypertension (review patient records, extract specific data, and recording of collected data in standardized forms);
8. Conducting supervision of clinical audit on diabetes and hypertension management. At the first stage for the initial assessment of the management of diabetes and hypertension

will be selected 6 PHC clinics in total - 3 clinics in Tbilisi, one clinic in Kutaisi, Mtskheta and Batumi;

9. Training of up to 20 PHC Master trainers/early adopters (including GPs and nurses) to use the new algorithms/protocols to facilitate the implementation of newly approved guidelines for the management of diabetes/hypertension in PHC, as well as to evaluate and monitor their implementation.

The target population of the Project

The target population of the Project are Primary Healthcare Providers of 4 PHC centers from Tbilisi and 2 PHC centers from Kutaisi, 1 PHC Center from Batumi and 1 PHC Center from Mtskheta.

Achievements

Activity 1 - Promoting a series of webinars (3-4) for the implementation of diabetes management tools and the exchange of country experience - diabetic retinopathy screening, therapeutic education and other relevant topics

PHC experts from Georgia participated in webinars regarding the diabetes meeting on Patient education and diabetic retinopathy screening on April 15 and 23. At the first webinar Georgian Family Medicine Association presented ***Overview of diabetic retinopathy screening in Georgia, its organization, strengths and challenges.*** Diabetic retinopathy screening manuals have been translated and distributed within the PHC providers.

At the second webinar country experience has been shared with other participants.

GFMA presented Overview of ***Therapeutic patient education for diabetes in Georgia.*** After those events Diabetic retinopathy screening manual has been translated and shared to PHC facilities for distribution among their personnel. Presentations are attached (see annex 7).

Activity 2 - Establish a roadmap of stakeholders, existing activities related to hypertension and diabetes, programs and related training materials (clinical and patient education)

At the initial stage has been developed the roadmap of those PHC providers who will be involved in the preparation phase for the PHC reform (in total 6 clinics): 3 in Tbilisi, 2 from Kutaisi, 1 from Batumi and 1 from Mtskheta). Other two PHC facilities expressed their willingness to participate in program and therefore one facility from Imereti region – “Kutaisi Clinical and Diagnostic Center №4” and one from Tbilisi – “Medical Center Holding 23” have been added to stakeholders.

Developed and accredited training modules for the management of Diabetes and Hypertension at PHC level and ToT course for the training of Master trainers. The course aims to support introduction of a common chronic disease management model for the selected primary care

service providers in the early stages (early adapters) of the reform to improve the quality of services and outputs/outcomes, on the example of hypertension and T2 diabetes. Training course is developed for Family Doctors and Nurses as well (See Annex 1).

Activity 3 - Creating a Patient Referral Pathways for local facilities and PHC staff based on updated and approved national protocols to facilitate their implementation in PHC.

20 pathways have been developed for the management of patients with Hypertension and Diabetes based on newly approved PHC guidelines:

For the management of Hypertension:

1. Diagnostic of Hypertension
2. Blood pressure measurement
3. Initial assessment of the patient with Hypertension
4. Detecting of “White Coat” and “Masked” Hypertension
5. Threshold for treatment initiation and treatment goals in patients with Hypertension
6. Management of Dyslipidemia in patients with Hypertension
7. Non-pharmacologic management of patients with Hypertension
8. Hypertension and DASH dietary approach
9. Pharmacologic management of patients with Hypertension
10. Regular follow up and diagnostic tests for patients with Hypertension

For the management of Diabetes:

1. Detecting of diabetes;
2. Assessing of CVD risk in patients with Diabetes;
3. Non-pharmacologic treatment of patients with diabetes
4. Pharmacologic treatment of patients with diabetes
5. Follow up and monitoring of patients with diabetes
6. Management of Hypertension in patients with Diabetes
7. Assessment and management of diabetic nephropathy
8. Assessment and management of diabetic neuropathy
9. Assessment and management of diabetic retinopathy
10. Assessment and management of diabetic foot problems.

For detailed information see Annex 3 and 4

Activity 4 - Developed a multidisciplinary curriculum and training materials in accordance with approved clinical protocols, algorithms and guidelines.

Training module covers following topics (See Annex 2):

- The role of primary health care as a cost-effective, affordable and equitable system in the prevention, early detection and management of non-communicable diseases - importance and opportunities of a multidisciplinary approach;

- Establishment of registers of non-communicable diseases (in particular, hypertension and diabetes), organizing reporting system/referrals;

- Development of quality indicators for hypertension and T2 diabetes management, definition of baseline and target data.

- Establish effective cooperation between primary health care providers, specialized medical and public health services in order to implement an effective management model for hypertension and diabetes;

- Demonstrate the roles and responsibilities of team members within all stakeholders, as well as within the organization, facilitate the establishment of quality monitoring teams at the local level, and develop job descriptions.

- Raising patient awareness and developing patient educational activities with patient direct involvement and participation.

Activity 5 - Creating educational materials in hypertension and diabetes for patient education purposes

Developed educational materials regarding prevention of diabetic foot problems and non-pharmacological treatment of diabetes (see annex 8).

Activity 6 - Identify key performance indicators to monitor the quality of management of diabetes and hypertension in PHC

For the purpose of monitoring quality of PHC services have been identified indicators at the PHC level for following conditions:

- Asthma
- COPD
- Cardiovascular disease
- Diabetes mellitus
- Hypertension
- General population
- General care/Organizational indicators

Indicators shared within the project stakeholders for discussion. Set of indicators see in the attachment. (See annex 9)

Activity 7 - Train at least 20 master trainers to review and interpret clinical audits' results on management of diabetes and hypertension (review patient records, extract specific data, and recording of collected data in standardized forms)

On July 21 have been conducted online meeting (webinar) with the Directors/Managers of PHC facilities. More than 85 PHC clinics were participating in this webinar during which have been discussed issues regarding current practice of diabetes and hypertension management and role of PHC team in improving quality of medical service, diabetic complications' screening practice, therapeutic education of diabetic patients, etc.

On July 30 have been conducted face to face training of the medical staff from PHC facilities who expressed interest and willingness to participate in 5 hours on-site training regarding improving quality of medical service of diabetes and hypertension and detailed discussion of audit tool for assessment diabetes care in selected medical facilities.

During the training session participants were introduced Audit tool for assessing quality of diabetes care at PHC level. Participants were trained as master trainers in technical, methodological and procedural issues of applying an audit tool in their PHC facilities. 2 additional facilities beyond the project's initial stakeholders expressed their willingness to conduct clinical audit in their centers and therefore they were included in the list of study participants.

Video recording of July 21 meeting could be seen at:

https://drive.google.com/file/d/1AcE-Wi091PoAetMK6b5HgaWDamDmjl8F/view

Video recording of July 30 could be seen at:

https://drive.google.com/file/d/1r0dDiDu8ml_IJ7QGj9hpGqD5vwmBU0Z6/view

https://drive.google.com/file/d/1TsgWH9z3PNmLFxv0LTp1QPhjAztIwrxs/view

Full Recording of the meetings and presentations, list of participating facilities and attendees attached in annex 10.

Activity 8 - Training of up to 20 PHC Master trainers/early adopters (including GPs and nurses) to use the new algorithms/protocols to facilitate the implementation of newly approved guidelines for the management of diabetes/hypertension in PHC, as well as to evaluate and monitor their implementation.

On July 7-10 conducted first round of the planned trainings for PHC Master Trainers and different providers (See attached attendance lists). Training has been delivered in mixed mode: face to face in combination with distance using Zoom Videoconference platform. Training involved Refreshment course on implementation of updated protocols in Hypertension and Diabetes care at PHC level for Family Doctors and Nurses, as well as Multidisciplinary training with participation of different PHC Team members, including doctors, specialists, nurses and managers. Participating PHC facilities and regions see in annex 6.

Training conducted in interactive format. During the course have been discussed issues of developing non-communicable disease registers, key performance indicators for quality measurement, agreed activities regarding assessment of training needs for local PHC team members, and testing clinical audit tools for self-assessment of management of Diabetes and Hypertension. Training has been recorded (see attached video).

On September 21-23 accredited training course (12 credit points) conducted in management of hypertension in primary care to facilitate the implementation of newly approved guideline. Training was conducted by the representative of Georgian Hypertension Society Dali Trapaidze and MD Vaja Koberidze. Training format was mixed: remote and face to face. For online training has been used Zoom videoconference platform:

https://us02web.zoom.us/j/83790354634?pwd=RkdQSXVDeEhxVXdsbVVpclcrTkxOQT09

Training video recording could be found at:

https://drive.google.com/file/d/1yK03IsZhN0HCMkDNi8tKeOZNnYu8hM_B/view?ts=614c8745

https://drive.google.com/file/d/1Khf-ojvooSua_BRFINCsSd1T4V-tLfG3/view?ts=614c7eaf

Full list of training attendees, presentations and video recording see in annex 11.

Frequently asked questions during the training:

1. How will PHC reform improve the management of chronic conditions at PHC level?
2. What will be main criteria for the inclusion of PHC providers in starting phase of the reform?
3. Within the PHC reform will be covered by UHC all of those tests which are necessary for Hypertension and Diabetes management and currently are not included in State program (e.g. HbA1c, micro-albuminuria, ABI etc.)?
4. What will be motivational mechanism for PHC providers for improving quality of medical service provided?
5. How could be increased patient's awareness of need for regular care for chronic diseases and what possibilities exist for patient education?

Several problems have been identified during the training and agreed recommendations for their solution:

Problem 1: There are not established registers of patients with Diabetes and Hypertension in all facilities and only some PHC facilities have complete registers for these conditions.

Recommendation: Nurses and doctors will start to review medical charts and patient's visit journals to create and complete development of registers for Diabetic and Hypertensive patients at the beginning of September.

Problem 2. Nurses are not involved in the management of Hypertension and Diabetes and their role is limited only to carry out statistical information.

Recommendation: Conduct needs assessment for practice nurses at local PHC facilities to define proper strategy for their involvement in chronic disease care. Develop Standard Operational

Procedures with detailed description of the roles of PHC Team members and delegate tasks within the team.

Problem 3. There is no Quality Assurance System at the PHC facilities to perform regular monitoring of medical service provided for the NCD care, no system to check if people attend for screening or follow-up for treatment.

Recommendation: Trained PHC providers will conduct baseline clinical audits for the management of Diabetes and Hypertension in their PHC facilities and this process will be supervised by Project experts within the Project period.

Activity 9 - Provide oversight for audit of 3 clinics to obtain baseline data on management of diabetes and hypertension in PHC in select clinics in Tbilisi and 3 in Kutaisi, Mtskheta and Batumi.

Based on the agreement with the staff of selected PHC clinics at the first stage have been decided to conduct audit to obtain baseline data on management of diabetes mellitus in 6 selected clinics from Tbilisi and regions. But 2 additional clinics "Medical Center Holding 23" from Tbilisi and "Polyclinic №4" from Kutaisi, expressed their willingness to participate in this activity. So, audit of diabetes care conducted in following 8 clinics:

Region	**PHC Facility**
Ajara – Guria	1. Family Medicine Regional Centre Batumi
Imereti	2. Nazarishvili Family Medicine Center, Kutaisi 3. Kutaisi №4 Clinical Diagnostic Center
Mtskheta	4. Mtskheta PHC center "Healthy Generation"
Tbilisi	5. National Family Medicine Training Centre 6. Krol Medical Corporation Vake District 7. Krol Medical Corporation Nadzaladevi District 8. Medical Holding 23
Total	**8**

For the clinical audit of Diabetes' medical service quality have been selected period from June 1, 2020 till June 1 2021.

Data collecting period

August 16, 2021 – August 31, 2021

Data collecting methodology

Collecting data through the manual review of individual patient records, extracting the specified data and logging data collected in standardized forms.

Data sources and chart selection process

20 data collectors attended a two-hour training by 4 audit advisers conducted at-distance and face to face on July 30 and August 16.

Data sources were patient records in selected medical facilities. For selection of medical charts were used the patient registers of each medical facility. These registers were presented in Excel format.

Patient charts were randomly selected from the register using Excel random sample generator. Once the chart was found, the data collectors checked it to make sure the patient meets the inclusion criteria. If they met the inclusion criteria, data collector continued to the next step; if they did not, the chart was put back and selected the next chart from the random chart selection list.

The first step was to create two list of patients:

1. Patients' register with the diagnosis of diabetes mellitus;

2. Adult patients aged 18 or older with diabetes type 2 who have visited clinic in the abovementioned period: from June 1, 2020 till May 31 2021 inclusive.

The second step was the random selection in those clinics where number of patients were more than 150. As for those clinics, where number of patients with the diagnosis of type 2 diabetes were less than 150, have been selected all medical records without any exclusion.

Method that we used to randomly select rows of data in Excel:

1. Create a new column

2. In the new column, for every row, use the formula "= RAND ()". This gave us a random number between 0 and 1.

3. Then every row of data had a random number.

4. Sorted the data by the random numbers we generated from smallest to largest.

5. Once sorted by random number, we selected the first 150 patient IDs (the sample size was only 100 but we needed to provide the team with some extras).

Definition of Diabetic Patient

Inclusion criteria: **patients with Type 2 diabetes** since those with Type 1 require specialist care.

Definition of visit

When patients consulted the doctor. They physically visit the facility and are visited by the doctor, or had remote consultation for their health reason. This means that the pick-up of a prescription should not be included in the sampling.

Patient age - for records with diagnosis of Diabetes 18 and over years' old

The patient should be 18 or over years old before June 1, 2020.

CVD Risk Scores

Any CVD risk score (e.g. ESC Score, WHO/ISH, Framingham) that is recorded in the patient record.

Sampling Timeframe

Sampling timeframe - from **June 1, 2020 to May 31, 2021 inclusive (12 months).**

During this timeframe Georgian PHC system faced COVID-19 pandemic and the number of visits due to chronic problems has been decreased. So, one of interest was how the COVID-19 pandemic influenced utilization of PHC routine preventive services.

Data quality checking

Data quality was checked by audit advisory board members. During data collection process audit advisors were conducting regular supervision. Each advisor was assigned to the specific PHC facility. Number of medical charts checked by the data collectors at the target facility were selected randomly and checked by the audit advisor additionally to be sure that collected data quality me desired criteria.

Results of diabetes audit analysis and relevant tables attached in annex 12.

On September 22, was conducted Diabetes Audit Analysis feedback session with participating PHC facilities. Audit results have been shared with the Auditors and data collectors. The results from Batumi regional FMC were significantly deviated from median indicators that raised doubt regarding the accuracy of data. Therefore, Batumi data collector team and the responsible audit adviser have been asked to check the register of the patients and have informal meetings within the team to discuss data quality issues.

Meeting was recorded. Video recording could be seen at:

https://drive.google.com/file/d/1lk5YPb3eSgpatt_VPwKq6wfp21XgkZj7/view?ts=614c7ef2

List of participants of the audit feedback session, presentation and video recording see in annex 13.

Key messages and recommendations

Key achievements:

1. The initiative shows how it is possible to building evidence by using current collected data to improve clinical practice and, from these, inform the ongoing health reforms.
2. Based on the experience with this exercise the team of expert auditors can move forward with using the audit tool in other healthcare facilities.

3. Study helped us to highlight the discrepancies between actual practice and standard of diabetes care in order to identify the changes needed to improve the quality of medical service for diabetic patients;
4. Study highlighted the need to establish local clinical pathways and routine data standards for ensuring collection of quality data;
5. Study highlighted the need for preparation (e.g. through training or introducing specific manuals) before introducing quality improvement tools and the importance of a visible relationship between audit activity and patient care;
6. QI leaders in selected facilities realized importance of systematic approach to design, test and implement change using real-time data for improvement, with the ultimate aim of delivering a tangible and evidence-based difference;
7. Individual family doctors realized the importance of participation in quality improvement activities, their involvement in discussing the conditions that contribute to successful improvement initiatives in PHC, and their role as physicians in those initiatives.
8. CVD risk calculation could be done having the data about age, gender, smoking status, systolic BP and total cholesterol level, but there was no record in medical charts. Therefore, this message was communicated to the healthcare providers from selected facilities and they were given task to calculate and enter CVD risk scores in relevant medical records.
9. The challenges related to the COVID-19 pandemic showed that there was disruption of the delivery chronic care to diabetic patients. So, developing a practice organization plan to organize chronic care and use digital channels for support, especially to vulnerable patients might be very helpful.

Lessons learnt

1. Due to time constraints, we were not able to communicate importance of QI activities to all medical staff of selected PHC facilities, therefore single individuals in a team which were responsible for all audit might be limiting factor for chance to drive improvements;
2. We could not involve nurses in clinical audit process;
3. Discrepancies between the data from Batumi regional FMC and other clinics showed us how important is to have correct patient registers and how poor or missing recording of data in data sources may compromise data quality;
4. Retrieving data from electronic or paper health records for clinical audits was inherently more complex than clinicians were able imagine and this lesson was very useful for them for the future QI activities;
5. Conducting an audit was a time-consuming and demanding activity, and due to the period of the study when the majority of medical staff had vacation, the data collection process was performed in a pressured environment, leaving little time to develop, carry out and re-audit an action plan.

6. Primary care providers have substantially fewer resources to develop QI capacity on their own. Most PHC clinics have large numbers of patients, leading them to focus on the daily demands of patient care and they need external support to participate in these kinds of activities.

Recommendations for future activities

- Continue to improve health information systems in place (to create chronic disease registers, prevalence, incidence and coverage measures) to use them for planning, managing, and delivering high-quality health services for non-communicable disease.

- Continue activities to ensure local pathways and standard operational procedures for management of NCDs exist and are combined with effective oversight and accountability.

- Continue participation in research and development process by regular clinical audit of medical care and developing CPD activities for PHC medical personnel.

- Develop patient educational materials and patient self-management programs to help patients understand the care setting most appropriate for their condition and avoid unnecessary hospitalizations.

Annexes

Annex 1.
Training program - "Improving the management of hypertension and T2 diabetes in Primary Care" for Family Doctors and Nurses.

Annex 2.
Multidisciplinary curriculum and training program- "Improving the management of hypertension and T2 diabetes in Primary Care" for Family Doctors, Nurses and Managers

Annex 3.
T2 diabetes management – pathways
For the management of Diabetes:
1. Detecting of diabetes;
2. Assessing of CVD risk in patients with Diabetes;
3. Nonpharmacologic treatment of patients with diabetes
4. Pharmacologic treatment of patients with diabetes
5. Follow up and monitoring of patients with diabetes
6. Management of Hypertension in patients with Diabetes
7. Assessment and management of diabetic nephropathy

8. Assessment and management of diabetic neuropathy

9. Assessment and management of diabetic retinopathy

10. Assessment and management of diabetic foot problems.

Annex 4.

Hypertension management – pathways

For the management of Hypertension:

1. Diagnostic of Hypertension

2. Blood pressure measurement

3. Initial assessment of the patient with Hypertension

4. Detecting of “White Coat” and “Masked” Hypertension

5. Threshold for treatment initiation and treatment goals in patients with Hypertension

6. Management of Dyslipidemia in patients with Hypertension

7. Nonpharmacologic management of patients with Hypertension

8. Hypertension and DASH dietary approach

9. Pharmacologic management of patients with Hypertension

10. Regular follow up and diagnostic tests for patients with Hypertension

Annex 5.

Training Materials – Day 1

Training Materials – Day 2

Training Materials – Day 3

Training Materials – Day 4

Annex 6.

Participating PHC facilities and regions are presented in table below: Region	**PHC Facility**
Imereti	Nazarishvili Family Medicine Center – 9 participants – 3 trainers Kutaisi №4 Clinical Diagnostic Center – 7 participants – 1 trainer Kutaisi Children №3 Polyclinic - 1 participants/trainer
Qvemo Kartli Region - Rustavi	JSC “Rustavi №2 Treatment-Diagnostic Centre – 13 participants
Tbilisi	National Family Medicine Training Centre – 38/12 GP trainers, 5 Nurse Trainers, 4 Manager trainers Krol Medical Corporation Vake – 3/2 trainer Krol Medical Corporation Nadzaladevi – 3/3 trainer
Total	**73 participants**

Annex 7.
Diabetic retinopathy screening and patient therapeutic education – presentations

Annex 8
Diabetic foot problems – patient educational material

Annex 9
PHC indicators' package

Annex 10
presentations, list of participating facilities and attendees for meetings on July 21 and July 30

Annex 11
Accredited training course in hypertension management at PHC level, presentations, accreditation documents, list of attendees

Annex 12
Results of audit analysis for diabetes care in selected facilities

Annex 13
List of auditors participating in results sharing meeting on September 22