

Review of cancer control activities in Georgia

Country visit report & recommendations

16-18 July, 2019, Tbilisi, Georgia

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BACKGROUND

In the past twenty years the health care and health insurance systems of Georgia have undergone several structural and organizational reforms moving from a state-owned, centralized system, through privatization, to public-private partnership. These changes have significantly influenced the status and availability of diagnostic and therapeutic services, notably cancer services. The current model is a public-private partnership between state-governed financing and privately-owned hospitals and other health care providers (such as those offering cancer screening). Given resource constraints and the significant challenges Georgia has faced in the past, there have been some significant developments to improve cancer care. In particular, the implementation of a universal health care (UHC) program which has increased accessibility to diagnostic and treatment services, especially for vulnerable groups. In addition, Georgia should be congratulated on their development of a new cancer registry system which also includes a screening module. This represents an important step in the delivery of an effective screening program.

To continue this path of improvement, specific areas require further work. Cancer services are fragmented and appear inadequately coordinated. Quality assurance systems are limited, notably for screening programs. Non-evidence-based practices are taking place (for example thyroid cancer early detection and prostate cancer management programs, as well as breast cancer screening at early age, etc).

The aim of the mission was to carry out an assessment of cancer services in Georgia with a focus on early diagnosis and screening. Other aspects of cancer control such as diagnosis, treatment and palliative care were explored. A debriefing at the Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs of Georgia (MoH) took place at the end of the mission and evidence-based cancer control strategies and recommendations were presented which are further elaborated in this report.

AGENDA OF THE VISIT

| Date, | time | Activity | place | Notes / questions |
|---------|-------------|---|-------|-------------------|
| July 16 | 10:00:11.00 | Meeting with Deputy Minister and Team Director General of NCDC | NCDC | |
| | 11.00:12.20 | Round table, major stakeholders, participating in cancer prevention and screening | | |
| | 12.20:12.40 | Coffee break | | |
| | 13.30:14.30 | Round table, II (continue) | | |
| | 14.30:15.30 | Break | | |

| | | | | |
|---------|-------------------------------|--|---|------------------------------|
| | 15.30:16.00 | Meeting with UNFPA | | |
| | 16.00 : 17.00 | Cancer registry Cancer screening administration | | |
| July 17 | 9:00 transfer | Screening : | National screening center, main office | Gldani |
| | 10.00:12. 30 | Mammography, PAP smear, thyroid U/S , etc | | |
| | 12::30- 13:30 | Screening Centre Branch Colposcopy, Colonoscopy | | |
| | 13:30:14:30 | Break | | |
| | 14:30:16:00 | Private clinic, referral after screening | Todua Clinic | |
| | 16:00 | Additional visits to private clinic /meetings, according to requests | Ingorokva | |
| July 18 | 9.30 transfer 10:00 :14.30 | Department of Oncology, TSMU Radiotherapy, Palliative care (Onco) Private hospital Mardaleishvili | Universal medical center (former national cancer Institute) | Lisi lake “-“-----“-“ |
| | 14:30 : 15.30 | Break | | |
| | 15:30:18:00 | Preparation for debriefing | | |
| July 19 | 10:00 | Debriefing | Ministry | |

FINDINGS ON CANCER SCREENING

Epidemiology

Cancer represents an important burden of disease in Georgia. Although there has been some improvement in recent years, people with cancer present late, with many cases being diagnosed at stage III or IV. A recent review of stage data from cancer registries conducted by the International Agency for Research on Cancer (IARC) revealed that only 50% of breast and cervical cancer are diagnosed at early stage in Georgia compared to 70-80% in Belarus or Ukraine (personal communication from Dr Znaor).

Table 1 presents cancer incidence figures from the Georgian cancer registry and IARC (2018 estimates). IARC estimates were built on data available from Georgia and neighbouring countries before 2018 and therefore may not reflect current position. However, Georgian cancer registry figures are not very different than IARC estimates from 2018 with the exception of thyroid cancer, which has an incidence that is higher than expected and is much higher than in neighbouring countries or in the European Union. It appears that there has been a significant rise in cases of thyroid cancer in women reported since 2015.

Breast cancer is the most common cancer in women and is the leading cause of cancer deaths in women. The incidence of breast, colorectal and prostate cancer are considerably less in Georgia compared to the European Union.

Table 1: Incidence- source Cancer Today IARC & Georgian cancer registry

| | Georgian cancer registry figures | Georgia - IARC estimates 2018 | | | Europe - IARC estimates 2018 | |
|-------------|---------------------------------------|-------------------------------|-----------------|--------|------------------------------|-----------------|
| Cancer site | Crude rate per 100,000 Male/Female | Crude rate per 100,000 | ASR per 100,000 | Number | Crude rate per 100,000 | ASR per 100,000 |
| Breast | 82.8 | 55.9 | 34.0 | 1141 | 136.0 | 74.4 |
| Cervix | 14.3 | 14.5 | 9.8 | 297 | 15.9 | 11.2 |
| Colorectal | 20.8 / 17.1 | 16.5 | 8.7 | 645 | 67.2 | 30.2 |
| Thyroid | 48.3 (women only) | 3.3 | 2.2 | 129 | 10.5 | 7.5 |
| Prostate | 25.7 | 33.5 | 20.8 | 625 | 125.1 | 62.1 |

Table 2: Mortality- source Cancer Today IARC & National statistics office of Georgia

| Cancer site | Causes of deaths in Georgia 2018 | | | Cause of deaths in Europe | |
|-------------|---|------------------------|-----------------|---------------------------|-----------------|
| | Number- IARC estimate (actual no. Geostat - National statistics office of Georgia) | Crude rate per 100,000 | ASR per 100,000 | Crude rate per 100,000 | ASR per 100,000 |
| Breast | 597 (748) | 29.2 | 15.9 | 35.8 | 14.9 |
| Cervix | 186 (166) | 9.1 | 5.5 | 6.7 | 3.8 |
| Colorectal | 427 (562) | 10.9 | 5.7 | 32.6 | 12.6 |
| Thyroid | 31 (40) | 0.79 | 0.41 | 0.94 | 0.38 |
| Prostate | 282 (380) | 15.1 | 8.5 | 29.8 | 11.3 |

General observations on cancer screening programs

Georgia operates cervical, breast and colorectal screening programs that cover all of Georgia. In addition, a prostate cancer management program is offered throughout the country and a thyroid cancer early detection scheme is offered in Tbilisi municipality.

Governance and management

Cancer screening in Georgia is led by a team in the National Centre for Disease Control and Public Health (NCDC). The team is responsible for national policy, financing the program and program monitoring. The National Screening Centre (NSC) also has a lead role for technical issues and training. However, it was unclear to the mission team the leadership arrangements for implementation and where responsibility sits for protocols, guidelines and quality assurance.

Contracting/ financing

There are two separate funding streams for cancer screening.

- State, sometimes referred to as the Regional program, funds screening of population residing (officially registered) outside of Tbilisi
- City Hall, sometimes referred to as the municipality, funds screening of population residing (officially registered) in Tbilisi, capital city.

Mechanisms of commissioning/ purchasing and payment for services are different in the two arms of the service. In general, providers in Tbilisi are paid more for the same service than those in the rest of the country. Providers reported that they don't feel the amount paid for screening is adequate and this deters them from participating in the program. This creates a degree of inequity of access across the country. The screening test and some limited investigations for screen positive cases are paid for as part of the screening program, but in most cases the diagnostic part of the pathway is not funded (see section under cancer diagnosis for more details). Informal reports suggest that this has deterred individuals with screen

positive results from seeking further investigations and therefore treatment. This failure to fund a crucial element of the screening pathway undermines the programs' effectiveness.

Information management system

In 2015, the NCDC developed a population-based cancer registry. In 2019 this system has been extended and developed into an integrated cancer registry software (IC registry which contains a screening module). They have successfully worked with their ministry of justice that uses real-time feed to use national ID numbers to populate a population register. This screening module is linked to the cancer register and financing mechanisms for screening.

This register has just gone live and the team is currently migrating data from existing systems across Georgia. Once up and running this register represents a significant development and opportunity to run an effective population-based screening program with the potential to collect good quality data for quality assurance and tracking of patients through the screening pathway.

However, if the IC registry is to be used for patient tracking then further work will need to be done with the private sector who provide the follow-on diagnosis and care after a patient is screen positive. Currently, it was reported that private sector providers are only required by law to enter data for people who are diagnosed with cancer, they are not required to input information on other investigations or interventions. This means that as things currently stand, the IC registry cannot be used to track patients through the pathway and operate a failsafe. However, expert understood that this is planned for the future and once in place, it will represent an important step in providing an effective screening pathway.

Workforce

The healthcare workforce in Georgia is imbalanced with a high ratio of doctors/population and more doctors than nurses (1 doctor to 0.7nurses). However, while overall there are large numbers of doctors there are shortages in certain specialities such as pathology. There are also shortages of technicians e.g. in medical physics. These shortages have an adverse effect of the running of screening programs.

The NSC have run training programs for staff from across the country including; radiologists, radiographers, colposcopists and management and administrative staff.

Cervical cancer prevention

Cervical screening was started in 2008 in Tbilisi managed through City Hall municipality. In 2011 the program was extended across the rest of the country.

Screening is offered every 3 years to women 25-60 years. The program uses Papanicolaou (Pap) tests.

During the visit to the NSC, neither sampling for HPV nor testing for HPV were performed. HPV testing can be done in Georgia in private clinics or abroad but this is expensive.

Coverage

Coverage has remained low despite efforts to improve access through information campaigns and changing to the voucher system which it is hoped will improve access.

Current reported figures for participation are 17% in Tbilisi and 11% in the State program. A total of 40,847 women were screened for cervical cancer during 2018.

Cervical screening pathway

The pathway is slightly different in the State (Regional) program and City Hall (Tbilisi):

City Hall – Tbilisi pathway

Women are given a voucher which enables them to attend either the NSC or one of 25 centres across Tbilisi that have been commissioned by the City Hall to provide cervical screening. Pap tests are taken by gynaecologists.

There was some evidence that even though women can have a Pap test free, some women choose to have Pap test at a private clinic and pay for it out of pocket. In the past, these tests could not be recorded on the IC registry however, with the introduction of the new screening module, this is being addressed.

Laboratory arrangements within Tbilisi are fragmented. The NSC runs a cytology lab for samples taken in the NSC and one other clinic. Eight medical facilities hold contracts with “Mega-labi”; three medical facilities have contracts with “Aversi”. The remaining 12 medical facilities carry out cytological testing of slides themselves.

Women who have a positive screen are referred to colposcopy, this is provided at Didube and Varketili NCS. Women screened at the Gldani NSC need to go to another site for colposcopy. NSC has developed software to track women who have had a positive smear to check that they have had colposcopy and appropriate follow up. This software has been shared across municipality program, in addition, this software also includes individuals from state program who were screened at the NSC. The new IC system will also be able to track patients.

Funding pays for punch biopsy but no other investigations. The CIN1-positive women are usually followed for 6-12 months with repeated cervical cytology and colposcopy. It was mentioned that up to 40% of screen positive women return to NSC for further treatment but there was not information on the remaining 60% of screen positives. Although some of these women will probably be receiving care in other hospitals, there was a concern that some women do not go for further investigation or treatment after a positive Pap test because of the cost. It was reported that some of these women return to screening with more advanced disease without having received treatment. The new IC system will allow tracking of all patients across Georgia so that better information will be available on outcomes for this group of women.

State or Regional Program

Women attend primary care and are referred to a screening centre for their test. Regional (state) program is started in 2011, as it is mentioned above. A pilot of organised screening was launched in 2014 in Gurjaani to train rural doctors to take Pap tests with the hope that this would increase coverage. Unfortunately, coverage has seen a small decline since the introduction of the pilot (24% -> 21%).

Following a tender in 2017, cytology for providers outside of Tbilisi moved from the NSC laboratory to the Evexy corporation. Evexy operates their own laboratory in Kutaisi and sub-contracts work to two other laboratories in other parts of Georgia outside of Tbilisi. The Hera laboratory provides a service for patients using the Hera clinic and Mega-labi which provides a service for Samegrelo, Adjara, and the regions located in the east part of Georgia.

Quality assurance and laboratory quality control (QC)

There does not appear to be a single agency responsible for quality assurance for the screening pathway. Laboratories do not appear to work to a single set of standards even if the BETHESDDA system is in place in the country. Quality control is organized by each laboratory and therefore is not consistent across the country. The NSC lab has internal QC and sends slides to the Czech Republic or other countries for external QC. Aversi and Mega-lab also report having internal and external QC in place. The mission team did not

obtain information regarding QC for the 12 facilities within Tbilisi program that provide their own cytology laboratory.

HPV vaccination

HPV vaccination pilot project was implemented in December 2017 through a GAVI demonstration project using Gardasil 2x doses. Delivery is done through primary care.

At time of the mission coverage was 49% (1st dose) and 35% (2nd dose). However, these national figures mask considerable variation over the country with Ajara recording figures of 89%/38% and Tbilisi 40%/10%.

From September 2019 HPV vaccination is included in the national immunization program.

Breast cancer screening:

Breast cancer screening is offered using mammography between 40-70 years once in two years. WHO guidelines recommend mammography screening should start at 50 (given current health system development in Georgia). In Georgia there is a belief that because 20% of cancers are in women 40-50 years, screening should be offered to this younger age group, however the capacity of mammography screening to decrease breast cancer mortality in young women has not been demonstrated firmly.

Coverage

Coverage is low. In Tbilisi the rate is reported to be 17% in 2018, however it was below 9% in the rest of the country. A total of 41,420 women were screened during 2018.

Breast screening pathway

Women are encouraged to attend for mammography screening through primary care. The NSC operate a call/recall system, ringing women when they are due a screen.

There are a limited number of mammography machines available to the screening program. 15 are in Tbilisi, the remainder are in the large towns in the regions. It is unclear whether all machines are functioning. Three mobiles have been operating in the country. However, it was reported they have had limited success in improving attendance. In some locations digital mammography is available.

Images are reported using the BIRAD system. It was reported that there are not enough radiologists who are trained to read mammograms, especially in the regions.

For screen positive women, the Municipal Breast Cancer Screening Program provides fine-needle aspiration biopsy (FNA) with cytological examination, which if necessary is performed by a physician mammologist under ultrasound control. Radiologists can perform this procedure as well. FNA is not provided as part of the program in other parts of the country.

Stereotactic biopsies are unavailable at the NSC, because of lack of equipment, therefore women who are screen positive with microcalcifications are brought back at 6 monthly intervals to check rather than have an early biopsy. Not only is this potentially increasing radiation exposure for women and may well increase anxiety, it places unnecessary demands on the limited resources available for breast screening.

No screening multidisciplinary team meetings are in place.

Once diagnosed with breast cancer, patients are referred to oncologists where they can obtain treatment under the UHC program.

Lack of state funding for parts of the diagnostic element of the screening pathway may deter women who are screen positive from obtaining further necessary investigations. This means that the screening program is unlikely to achieve the anticipated reduction in breast cancer mortality.

Quality assurance

It was reported that the program uses the EU guidelines and QA standards however those guidelines are not yet approved at the national level.

In line with the European guidelines for breast cancer screening, Georgia has introduced double-reading for mammograms. In Georgia it is mandatory for all clinics involved in the screening program. This requirement has been introduced into the relevant standard regulations and is a condition of a tender.

During the visit to the NSC staff described their approach to double reading and explained that discordant results are resolved by consensus. The team clearly devoted time to monitoring and improving the quality of images through discussion and review. This approach to learning should be congratulated and encouraged.

Colorectal (CRC) screening

CRC screening is offered to men and women aged 50-70 years once in two years an IFOBT followed by colonoscopy for screen positives.

Coverage

Coverage is reported for 2018 as less than 4% in Tbilisi and less than 2% in the rest of the country. A total of 10,084 people were screened for CRC during 2018.

CRC pathway

CRC screening including colonoscopy is offered at NSC, the pathway used at the NSC is supposed to be replicated across Tbilisi and the rest of the country.

If individuals wish to be screened, they phone up and make an appointment. They collect the kit from a nurse and return the kit to the nurse some days later after taking a sample, making the second visit. The result is then communicated to them at a later date. Given that the test used is a rapid kit test, it may be possible to reduce the steps in the pathway.

The test used is Acro Biotech FOB immunochemical rapid test (Acro Biotech, Inc., Rancho Cucamonga, CA, USA). Staff at the NSC buy the tests (purchase it is not centralized) and consider sensitivity/specificity and test performance. If the program is to expand it may be worth considering bulk purchase of kits that meet agreed sensitivity/specificity and test performance or automated laboratory testing for FIT. Currently, the NSC reports insufficient funding for CRC program: 5 GEL per test (including administration costs), which is 1.7 USD versus 2.9 USD in 2019. A geographical difference in funding between the capital city and the regions has been noted (Table 3).

People with a positive iFOBT rapid test are offered a colonoscopy in the NSC. During the Mission's visit to the NSC clinic in Tbilisi, it was reported that in 2018 iFOBT test results were 89% negative and 11% positive, with a colonoscopy performed in more than 90% of iFOBT-positive cases. Suspicious lesions are biopsied but there is no funding to remove adenomas. Patients found with adenomas are advised to go to another clinic and have the polyp(s) removed at a second colonoscopy (polypectomy costs vary 500-1,000 GEL (169-337 USD)). This is problematic. Firstly, patients are subject to a second unnecessary colonoscopy

with all the associated risks such as perforation and bleeding. Secondly, there are few colonoscopists who are trained to do surgical procedures (although up to 80% out of the total 60 colonoscopists in Georgia were reported to be surgeons), so this places strains on limited skilled staff. Thirdly, an important aim of CRC is to reduce the incidence and mortality of colorectal cancer through the removal of precancerous adenomas (polyps). There is a considerable risk that patients fail to attend for the second colonoscopy given that it is such an unpleasant procedure and therefore the screening program will fail to deliver the expected benefits.

Table 3. Geographical difference in costs for CRC tests and examinations between Tbilisi and regions

| | Reported tests/examinations costs, in Georgian Lari, GEL (in USD) | |
|------------------------|---|-----------|
| | Regions | Tbilisi |
| iFOBT test | 5 (1.7) | 5 (1.7) |
| Diagnostic colonoscopy | 38.05 (12.9) | 57 (19.2) |
| Histology | 15.64 (5.3) | 26 (8.8) |

Quality assurance

The iFOBT rapid test cassette is an easy test to use. Staff did not operate any QC/checking of test results. Colonoscopy in CRC requires to be of a very high standard given the risks associated with the procedure. The NSC reported that there was no special training or checks on performance for screening endoscopists.

Prostate cancer management program

Prostate cancer management program was started in 2010 from Tbilisi municipality, in 2011 it was expanded throughout the country. Prostate-specific antigen (PSA) testing is offered annually for men 50-70 years who are referred by either family physicians (GPs) or urologists (the program started as prostate cancer screening, but after recommendations from the ImPACT mission and WHO experts the design was altered to a prostate cancer management program).

A total of 14,348 men attended the program during 2018. This correspond to 8% of the total population (less than 6% of eligible men in Tbilisi and less than 2% in the rest of the country, as reported to the Mission). PSA testing is offered annually by either a GP or an urologist. The test includes the detection of PSA total, PSA free and the free-PSA/total-PSA ratio (Table 4). Within prostate cancer management in case of increased level of PSA, individuals are referred to urologists (see table 4). Prostate biopsies are performed by urologists. In case malignancy is detected prostate, the patient is referred to the hospital.

Table 4: PSA levels and ratio to be considered in the management for early detection of prostate cancer in Georgia.

| PSA levels considered as normal in Georgia | | |
|--|------------|-------------------|
| Test | Age, years | PSA levels, ng/ml |
| PSA total | 40-49 | 0-2.5 |
| | 50-59 | 0-3.5 |
| | 60-69 | 0-4.5 |
| | 70-79 | 0-6.5 |
| PSA free | All | ≤ 1.3 ng/ml |
| The percent probability of finding prostate cancer on a needle biopsy, % | | |

| | Ratio | Percent probability, % |
|-----------------------|-------|------------------------|
| Ratio: free/total PSA | 0-10 | 55% |
| | 10-15 | 28% |
| | 15-20 | 25% |
| | >20 | 10% |

The majority of men attending the program at NSC are from Tbilisi, men from out of Tbilisi can also be tested at the NSC but tests are funded from another source. Program data on proportion of referring or on age distribution of the referred was not available. Private clinics share data on pathology only if cancer has been confirmed.

It is a cancer management program rather than a screening program however the criteria to access the program are not clear, it also appears that the program is used by urologists for patients with symptoms to obtain a free PSA test.

It was reported that the program has adopted international (EU and US) guidelines. No QA/QC for the management of early detection of the prostate cancer in Georgia is in place.

Thyroid cancer management program in Tbilisi

Thyroid ultrasound (U/S) is offered once every five years for women 25-70 years since 2018. The thyroid cancer management program is not a state program, it is offered only by Tbilisi municipality. The criteria to access free thyroid U/S are very broad and include the following: familial history or personal history of cancer, diabetes or metabolic disease, BMI>25, lymphadenopathy, thyroid disease or abnormal TSH and dysphagia. It appears that self-referral is possible however only women presenting with the above criteria can access the thyroid U/S for free. The “thyroid cancer management” program uses 10% of the budget of the NSC.

Recent figures on outcomes of the program were provided to the mission: out of 7000 women who used the program, 37% were healthy, 52% were found with endocrine problems between 0.01% and 1% had a positive cytology. This cancer frequency figure corresponds to an age specific incidence of 1000/100,000 which is very high even among symptomatic patients. According to the national population-based cancer registry data the incidence rate of thyroid cancer was 48.3 per 100000 women in 2018.

The incidence of thyroid cancer has increased tremendously in the past 15 years in Georgia, thyroid cancer moved from rank 15 to 2nd among causes of female cancer. Interestingly, while all over the world the sex ratio for thyroid cancer is 3.5 women for 1 man, in Georgia it is 6 women for 1 man. Such a difference is very likely attributable to the increased practice of U/S examination among women compared to men (thyroid U/Ss reimbursed for women only).

The rate of thyroid surgery has also increased: up to 18% between 2014 and 2018. Thyroid surgery is commonly recommended by physicians (endocrinologists and surgeons) as an essential and the best treatment methodology. In addition, thyroid surgery is better reimbursed than other thyroid treatment and is therefore preferred by patients. No multidisciplinary team meetings are in place to treat thyroid cancer. In theory surgery is offered to patient based on international guidelines (i.e. malignant tumours of small size should not be removed) but in practice endocrinologists and surgeons advise thyroid removal whatever the size of the tumour. In most of the cases (especially when patients are not planning to have

more children) the thyroid is fully removed. After thyroid removal the patient is closely followed-up for 5 years, and he/she has to take hormonal treatment for life. The cost of overtreatment of thyroid nodules found by U/S (in terms of needless surgery and avoidable hormonal treatment) could not be evaluated during the mission but is expected to be significant.

No QA/QC is in place for the early detection/management program, nor for the treatment of cancerous lesions of the thyroid.

Conclusions on screening and early detection findings

Strategic aims for early detection of cancers

There has been significant investment of time and resources into developing cancer screening programs. However, given the epidemiology of the common cancers and the late stage of presentation, there has been inadequate focus on early diagnosis of cancers as compared to screening programs.

Governance

There is lack of clarity of roles and responsibilities between the NCDC and NSC regarding implementation, guidelines and quality assurance for the screening programs.

It is unclear why the program is managed differently in Tbilisi and the rest of the country and whether this is leading to inequity and inefficiency in program management.

Financing and commissioning

There has been significant investment in screening, however models of commissioning, contracting and purchasing are complex and may be leading to inefficient use of resources.

There is a failure to fund key parts of the screening pathway in the cervical, breast and CRC program which are deterring screen positive patients from accessing treatment. This means that the screening programs may be less effective in reducing the incidence and mortality of cancer.

Information management system

The information management system represents an important development and has the potential to make a significant contribution to quality assure and evaluate all the screening programs. However, currently there is a gap for screened-positive people who are referred for investigation before confirmation of a cancer diagnosis. The newly installed IC system should be able to address this gap if all facilities (including private clinics) provide information on this domain. Without this information it will not be possible to use the IC registry to failsafe the programs.

Coverage

Coverage is low across all the screening programs but particularly breast and CRC. It is questionable whether investment in these programs is worthwhile or equitable if coverage cannot be increased beyond these low levels.

Quality assurance

There are some good elements of QA within each screening program but there is a lack of leadership and no coordinated program of QA across the country that is working to common standards.

Maximising benefits and minimising harms.

Screening programs have the potential to benefit the population but also to do harm. The careful design and implementation of each program will enable a country to maximise benefits and minimise harms. In Georgia benefits will be maximised and harms minimised by focusing on quality and adequate funding and delivery of a complete screening pathway.

Cervical cancer screening:

The cytology laboratory service is fragmented, particularly in Tbilisi. There doesn't appear to be consistent QC program covering all laboratories.

More information is needed on the follow-up of screen-positive women. Screening will be ineffective if women who are screen positive do not attend for treatment of pre-cancer.

Breast cancer screening

Breast cancer is a third less common in Georgia compared to Europe. Therefore, the cost-benefit of screening may be less compared to screening programs in western Europe.

The evidence does not support screening women before age 50

There should be a focus on the quality of mammography and assessment to minimise the recognised harms¹ of breast screening.

Lack of funding for the diagnostic part of the pathway for screen positive women is leading to harmful practices and delay in diagnosis.

Colorectal cancer screening

Colorectal cancer (CRC) is four times less common in Georgia than Europe. Therefore, the cost-benefit of screening may be less compared to screening programs in western Europe.

The screening pathway has unnecessary steps, making it inefficient and potentially increasing harms² by exposing patients to more than one colonoscopy.

Adenoma detection and removal are not explicit aims of the program in Georgia. If adenomas are not removed as part of the program there will not be a reduction in incidence of CRC, and therefore the impact on mortality will be reduced.

¹ Overdiagnosis and over treatment of some cancers, overtreatment of benign breast diseases, false positives requiring invasive procedures (which can lead to significant harm), wrong reassurance for women with a false negative test (that can result in delayed presentation when symptoms arise), etc.

² Colonoscopy, even with very experienced operators, is associated with significant harm such as perforation. There are also harms caused by inappropriate reassurance for people with a false negative test and overdiagnosis and over treatment of some cancers and overtreatment of benign diseases,

Prostate cancer management

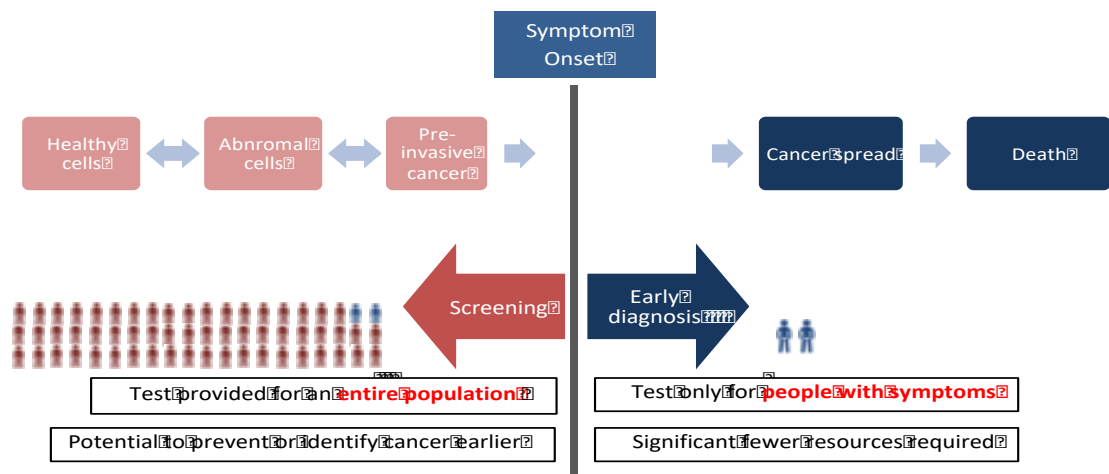
The criteria for referral are unclear and don't appear to be used appropriately. This may result in more harms³ than benefit.

Thyroid cancer management

There is over-use of U/S to screen for thyroid problems, this leads to important over-diagnosis of thyroid tumors, notably in women. Surgeons and endocrinologists do not follow International standards for the management of tumors found by U/S (i.e. asymptomatic cancer) therefore there is here is clear overtreatment (thyroid removal) leading to needless suffering and cost for the health insurance.

Important note on early diagnosis

Early diagnosis is not the same as screening. Screening invites people who are *asymptomatic* for testing, whereas early diagnosis is intended to detect conditions in people *with symptoms* as early as possible.



Key features of this approach:

- An early diagnosis program identifies and addresses barriers to diagnostic and treatment services both in the population and service providers. It builds service capacity and quality, as well as establishing referral pathways. These are all essential preparatory steps before starting a screening program.
- Screening programs test large numbers of (presumably healthy) people, this requires considerable investment in equipment, staff and IT. which can cause a strain on a health system. Whereas, early diagnosis is a strategy which focuses just on those people with symptoms, which is a much smaller number and therefore uses less resources.
- Where late diagnosis of cancer is a feature of a health care system, screening is unlikely to be effective as an initial strategy as both coverage and service capacity will be inadequate to

³ Significant overdiagnosis and overtreatment of clinically non-significant cancer (this can lead to major harm such as impotence and incontinence); knowing years in advance that you have prostate cancer without change in survival, false positives requiring invasive procedures (which can lead to significant harm),

reduce mortality. In these circumstances, an early diagnosis program is a more cost-effective strategy.

FINDINGS ON CANCER MANAGEMENT

One of the objectives of the Georgian National Cancer Control Strategy (NCCS) is “increase of cancer survival (SV) with proper treatment”. This objective includes increase access to treatment, increase access to palliative care, and increase high technology. Cancer is the 2nd cause of mortality due to NCDs, representing 12% of that group. The important impact of cancer on general survival and mortality should make cancer care a priority for the MoH. Among the 23 vertical programs at the MoH only one focuses on cancer (cancer screening) and only 39% of the public health expenditure is public. There is a proliferation of hospitals in the country which is a threat to quality of care, and there is no cancer care network to allow concentration of services that could increase quality. According to the MoH, national priorities in cancer care are the development of national guidelines, quality control, increase access to cancer surgery, oncology medicines and radiotherapy. To increase survival the NCCS is looking to guarantee 100% coverage in cancer surgery, 80% coverage on oncology medicines and 70% on access to radiotherapy.

Despite slight improvement in the stage at diagnosis distribution, in Georgia there is still a large proportion of patients (more than 40%) diagnosed when the disease is advanced (either regional extension or metastatic disease) when treatment has not much chance to succeed, but also the quality of life of the patients is more affected and the cost of treatment higher.

- **Facility, equipment and human resources are adequate (under-utilization of treatment equipment and human resources)**

1. Access to treatment

Cancer patients' treatment is covered by health insurance. The whole diagnosis process has to be paid by the patient, this includes conventional radiology, echography, endoscopy, mammography, CT, MRI, PET-CT, biopsy, Immuno-Histo-Chemistry, etc. After cancer diagnosis is confirmed and the stage of the disease established, the attending physician completes the form No. 100 with all data required and details on the treatment proposed. The form is sent to the administration for assessing the cost of additional diagnostic procedures and treatment and then sent to the MoH for deciding how much the patient has to pay. This process is based on the proportion covered by the government according socio-economic status of the patient.

After cancer diagnosis is confirmed, there is a group of patients for which the cost of further diagnostic tests and treatment is covered 100%. This group includes children up to 18 years; teachers employed in the public sector teaching from 1st to 12th grades; veterans; and people under the poverty line. Pensioners are covered 90% and others 80%. Nevertheless if the monthly salary is over 1 000 GEL (little more than 300 euros), the UHC program does not cover any cost and all the expenditure is out of pocket (if patient does not have private insurance) There is a ceiling of 12 000 GEL for systemic treatment and radiotherapy and of 15000 for surgery. Other sources of financing are the City Government (e.g. in Tbilisi the City covers

80% of the Trastuzumab) and some foundations/charities (e.g. Novartis provides Imatinib free of charge in one special clinic)

Therefore, one of the main barriers for many patients to access to cancer care is the cost of diagnostic procedures and the cost of treatment. The high cost of diagnosis is expected to be an important determinant of late diagnosis.

2. Increase access to high technology for cancer care:

- *100% coverage in cancer surgery.* There are large surgical departments for cancer care in the country. Usually there is no waiting time (or a reasonable one) for cancer surgery in those centres. Surgeons from different surgical specialities and surgical oncologists are well trained and keep their capacity and expertise because in those centres they are able to treat many cancer patients with tumours linked to their particular speciality. There are also Residency Programs, which contribute to the scientific update of the professionals and qualified them as specialists. Those surgical departments are organized by cancer sites (e.g.: thoracic surgery, urology, paediatric surgery, breast, gynaecology, neurosurgery, and a general surgery service including abdominal tumours) and the volume of case operated is considerable. It seems that the amount authorized by the health insurance to cover surgery is not a barrier to ensure the committed 100% coverage. Despite having these possibilities many patients are operated in a hospital with small volume of cancer patients, by non-specialized surgeons and without multidisciplinary teams. Worse than that, the patient might not be even referred to oncology because the surgeon does not have the knowledge to proceed in the right way. Regulation in this area is weak. Although licensing is mandatory, the number of patients is not taken into consideration in awarding licenses. There is also an accreditation program however, it is only voluntary.

There is no quality assurance program for cancer surgery in any of the hospitals. There is no control of unnecessary surgeries and their number is expected to be significant.

- *80% coverage in oncology medicines.* Access to essential medicines in oncology will be covered in the next section. Regarding facilities for systemic treatment, all the institutions visited have medical and / or paediatric oncology services. In all the centres the preparation and administration of oncology medicines (chemotherapy, hormonotherapy and immunotherapy/biological treatment) is done in a centralized area. Preparation is mainly done by nurses, pharmacists usually do not intervene in the preparation, and most of the preparation areas have cabin with laminar lux (one centre did not have). The administration area is mostly equipped with comfortable chairs that can be converted in beds following the needs of the patients, but at least one centre only has hospital beds, which prevent the patients to choose how to receive the treatment. There are enough medical oncologists and nurses, but while there is a residency program for doctors there is no formal training for oncology nurses. There is no waiting list to initiate systemic treatment and the patient is able to start as soon as the financial situation

is defined, including co-payment process. There is no bone marrow transplant facility in the country.

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In summary although the facilities and staff for systemic treatment can be improved in general, they do not seem to constitute a barrier to access to oncology medicines.

- *70% access to radiotherapy.* With a population of 3,7 million, following the old standard benchmark of one radiotherapy unit per million inhabitants, the present number of machines in Georgia would be consider excessive (only 4 units supposed to be needed, and 11 are operating). Currently, the estimation of demand is made based on the number of new cancer patients diagnosed in the country per year. Cancer incidence in Georgia is 9 381 cases (so approximately 10 000). Considering that 50% (current IAEA standard) of the new cancer patients will require radiotherapy (5 000) and that one teletherapy machine should treat 450 to 500 new patients per year, the number of machines needed is 10 to 11. There are 11 radiotherapy machines in Georgia, nine in Tbilisi and two outside the capital city. Other organizations recommend using 60% as the benchmark; in this case the results would be that 12 to 13 machines are needed. In any case the coverage is of 85 to 100%, which is very high.

In addition to the number of machines available, other elements are reflecting a good standard for radiotherapy equipment. In all centres visited the number of patients treated per machine per day does not exceed 70 and there is no waiting list to start treatment, confirming the number of machines is not a barrier to access to radiotherapy. There is equipment with stereotactic option, brachytherapy units and CT-Simulators available.

Only one out of four departments visited treated less than 500 new patients in radiotherapy per year (one of then treats 1,200) and the reason is that patients are moving out from that centre due to the technology available and the opening of centres with standard modern technology. This centre is the Universal Medical Centre (UMC, former National Oncology Centre) which has been reducing its activity in the recent years. The facility is really deteriorated, medical equipment is old (has only a Cobalt⁶⁰ machine, no linear accelerator, no CT simulator) and the maintenance of the whole facility is wanting. The hospital currently belongs to the Partnership Foundation. This Foundation is owned by the Government. The Foundation has three state (government) hospitals in Tbilisi: Republican General Hospital, Children's Hospital and UMC. It seems that there is a plan to move all the three hospitals to one site. Prices are varying among different hospitals; private hospitals have higher prices for different medical services in comparison with Centre UMC hospital with State ownership, so patients can receive the same treatment, for example, surgical operation, for lower price. The hospital used to treat over 3,000 new cancer patients per year and this amount has been exponentially reduced in the last two years being currently pretty low. It is notable that the centre still has qualified staff that could do a great job if the structural situation and equipment are improved, but the qualified staff started to emigrate out of the centre looking for better equipped hospitals in the city. Another centre in the neighbourhood is Cancer Research

Centre Mardaleishvili Medical Centre has a new Cobalt⁶⁰ machine almost unused treating only 7 patients per year.

There are enough qualified radiation oncologists and medical physicists in the country. There are training programs for both specialities on going. The main problem related to human resources in radiotherapy is the radiation therapy technologists (RTTs), not because the number of professionals doing this job, but the way they are trained (see human resources below).

Full treatment with radiotherapy cost around 7 600 GEL. According to the staff at the radiotherapy departments the amount assigned to cover radiotherapy and systemic treatment (12 000 GEL) is enough. Therefore, like the number of machines and staff, the cost of treatment is not seen as a barrier to access to radiotherapy for those patients fully or partially covered.

- **Essential list of medicine not updated, lack of national guidelines for treatment**

The list of essential oncology medicines is directly linked to the existence of guidelines for the management of invasive cancers and to the establishment of multidisciplinary teams.

- *National List of Essential Oncology Medicines.* There is no Essential Oncology Medicines List (EOML) based on the WHO List of Essential Oncology Medicines, for adults and for paediatric patients neither for palliative care. There is a list of 57 oncology medicines but physicians can prescribe also other medicines outside the list if they are registered. If the funds assigned to a patient finish, there is no mechanism to ensure the patient gets the medicine free because it is in that list. In all hospitals, almost every medical or paediatric oncologist can prescribe the medicines that are registered in the country, as long as the cost of the treatment is covered by the 12 000 GEL fixed as a ceiling to cover systemic treatment and radiotherapy. There is not list of medicines that are fully reimbursed. Such a list should be developed, it should contain medicine that are considered as really essential and that can really be fully reimbursed by the health insurance.
- *National guidelines for management of patients with invasive cancer.* In every hospital visited doctors claim they are following the NCCN guidelines and/or ESMO guidelines. As mentioned, there is no list approved as the essential oncology medicines. The basis for the constitution of a EOML are guidelines for management of invasive cancers that are adapted to the economy and capacity of the country. Such guidelines can be established only with the participation and full involvement of the most qualified professional/specialist members of multidisciplinary teams, the health authorities, the health insurances and the civil society (patients). Those have to reach a consensus of the best option when the ideal treatment is not available / accessible. These options are the recommendations of the resource stratified guidelines for management of patients with invasive cancers.
- *Multidisciplinary team (MDT).* There are MDT in some centres, but neither the composition nor the regular operation is really well organized and the requirement to discuss all new cancer patients before starting the treatment is not fully implemented. Most of the time the oncologist

calls to the meeting those specialists that he/she considers are needed depending on the case that is going to be discussed. Surgery sometimes is decided before the patient is seen in the MDT, particularly in urologic tumours. The evaluation of all patients before initiating the treatment is not standard practice. The absence of real and solid MDTs is probably the main reason for not having developed national guidelines and EOML.

- **Human resources: good level, need for training for onco-nurses and radio-technicians**

Most of the programs needed for training of health professionals in cancer care are available in Georgia. Human resource availability is not a barrier to increase access to quality cancer care

- *Education and Training for cancer surgery.* The standard program is usually four years training in the Residency Program of general surgery followed by two years in surgical oncology. In Georgia there is sub-specialization in surgical oncology, gynaecological oncology and urological oncology. In the area of urology it is four years of urology followed by general surgery and oncology. Not all the surgical specialities that treat cancer patients have a fellowship or other formal training program for sub-specialization on cancer surgery by speciality.
- *Education and Training for medical oncology/systemic treatment.* The program for medical oncology lasts three years; the first year is common with radiation oncology which is a great opportunity for future specialist to learn about the other speciality that will be part of the multidisciplinary team.
- *Education and Training for radiation oncology.* The residency program is under the Tbilisi State Medical University. Initially only in the High Technology Medical Centre of the Medical University (2011) and currently is also involving Todua Center (in Tbilisi) and Cancer centre of Adjara (in Batumi) There is a general exam before starting and the program consist in four years. The theoretical contents in oncology are common with medical oncology during the first year.
- *Education and Training for Radiation Therapy Technologist (RTTs).* There is no formal training program in the country for RTTs, NM technologists or radiology technologists and there is no special certification required for practice in those positions. In each hospital the source of RTTs could be different. In one hospital they were medical doctors that decided not to do specialization and were trained on the job to practice as RTTs.
- *Education and Training for Medical Physicist.* There is a Faculty of Medical Physic in the Technical University running a program without clinical component. The training lasts for four years. There is also a two-year Master Degree Program at the same Tbilisi State Medical University but also without clinical practice. There is some progress in the communication between the university and the ministry to link theoretical and clinical parts. Currently in some hospitals master trainees started doing their clinical part of the program.

- *Education and Training for oncology nurses.* There is no official recognition of the oncology nurses speciality and no training program for oncology nurses has been developed. In general, the number of nurses is not well known because there is no certification or registration for nurses.

FINDINGS ON PALLIATIVE CARE

Important improvements have taken place in the field of palliative care (PC) in the past 15 years. In 2004 PC services were initiated, funded by the state program. In 2007 PC was incorporated into the three major health regulatory laws. In 2008, the Union of Humanists became the national association for palliative care. In 2008-2012, regulatory changes were made to improve access to opioids, for example the duration of single dose prescriptions increased from 3 to 7 days. In 2012, National Chronic Pain Management Guidelines were approved by the Ministry of Health. In 2014 PC became a subspecialty Course. In 2019, with the involvement of the Parliament, palliative and hospice care was separated.

Soon a new decree on opioid access will be issued, in addition a new technical guidance is planned as a PHC development program.

Presently, opioids can be prescribed by GPs, the prescription can be for 2 opioids at a time and up to 7 days but only people terminally ill are allowed to receive opioids. Fear of opioids appears to be high among GPs and nurses. All GPs received 1-2 days training about PC during their studies but training in use of opioids is very limited, in addition some are still applying the old legislation which is more restrictive toward the use of opioids. Nurses don't have any mandatory training. Oral opioids (both rapid and prolonged action) are imported in the country but the range of opioids available remain limited. Some on-site trainings are taking place for primary care professionals (family, rural doctors and nurses). Opioids are sold only in state pharmacies that are located in police stations, those are rare (1 per region) and this is a real barrier to opioid availability, notably in rural regions. The total consumption of opioids remains low in the country (4.1mg per capita vs. 403mg in Germany).

In recent years, inpatient palliative care units have been opened. Today there are 10 palliative care departments in Tbilisi hospitals and one in Kutaisi hospital. There is one paediatric hospice which opened in 2016 thanks to the Open Society Georgia Foundation. There are several home care providers, but outpatient services remain limited in regions, they are present in only 6 of the 79 municipalities of Georgia (Tbilisi and the five regional municipalities: Kutaisi, Gori, Zugdidi, Telavi and Ozurgeti). Patients are reimbursed for 100% of home care visits and 70% for stay in PC beds in hospitals (e.g. with the equivalent of 25 USD per night).

PC team in hospitals are not really multidisciplinary; psychologists, nutritionists and physiotherapists are not interested in a career in PC. There are no educational programs or specialized literature for those professions. Specialization and qualification programs for nurses are also lacking.

Today in Georgia PC is recognized by the state as an integral part of the health care system and is considered as one of the components of continuous medical care. However some challenges remain at the policy level due to limited awareness about PC among policy makers: There is no comprehensive policy in place, nor a plan for palliative care development with clear targets, and funds are lacking especially for home care and tertiary care.

RECOMMENDATIONS

Steps that can be taken to save money:

1. **Shift resources from screening to early diagnosis** - except for cervical cancer (see below).
2. **Review expenditure on procurement and tendering exercises**
 - a. Consider consolidation of cytology laboratory services across Georgia (needs to be considered in light of potential shift to HPV testing and the need to ensure quality in all laboratories).
 - b. Bulk purchasing of tests (PSA, iFOBT → for triage of symptomatic patients)
 - c. Review costs of near patient iFOBT tests against automated laboratory provision.
3. **Thyroid cancer**
 - a. Stop reimbursement for thyroid US testing for diabetic, obese patients and other indications
 - b. Stop reimbursement for surgery if prescribed out of international/ new national guidelines to decrease unnecessary surgery rate
 - c. Stop expansion of thyroid U/S, particularly in PHC
4. **Prostate cancer**
 - a. Stop reimbursement of PSA testing in asymptomatic patients, but ensure free PSA and follow up in symptomatic patients
 - b. Encourage active surveillance practices to decrease unnecessary surgery rate (train urologists and relevant specialists and GPs in active surveillance)
5. **Breast cancer**
 - a. Stop reimbursement for mammograms in asymptomatic women (option to reduce program to women 50-70 years every 3 years to reduce costs and increase cost-effectiveness)
 - b. Ensure full reimbursement of mammograms, U/S and biopsy for all symptomatic patients (in chosen facilities to ensure quality)

Early detection

1. **Develop an early diagnosis program** (WHO can assist in setting up early diagnosis program)
 - a. Develop PHC capacity to identify early cancer symptoms (training and protocol development)
 - b. Strengthen referral pathways from PHC to diagnostics and treatment services. This should include: identification of appropriate services that can take referrals; Standardized Operating Procedures (SOPs) for referrals; and training.
 - c. Ensure full access to diagnostics (include as part of UHC)
 - d. Address capacity issues in diagnostic and treatment services e.g. surgical colonoscopists.
2. **Prioritize investment in cervical cancer screening**

- a. Consider an HPV testing (pilot). Suggested algorithm to consider:
 - HPV → ablative treatment
 - HPV + PAP smear for triage → ablative treatment

3. Colorectal cancer

- a. Ensure full reimbursement of diagnostic procedures to allow diagnosis of cancer.
- b. Ensure that all polyps can be removed at first diagnostic colonoscopy, stop onward referral to other services for removal of polyps.
- c. When scaling-up screening:
 - Streamline pathway from cohort identification to diagnosis
 - Ensure adequate endoscopy capacity for both diagnosis and surgical removal of polyps.

4. Ensure quality

- a. Clarify and strengthen governance arrangements for quality assurance (QA), this should include: being clear of the respective responsibilities of NCDC and NSC for standard setting and monitoring of quality in services and increasing screening management team capacity. (full time)
- b. Consider accreditation or similar scheme for screening services including all laboratories involved in the screening pathways.
- c. Put in place robust monitoring and evaluation (M&E) including addressing gaps in data, potentially by linking with funding mechanisms, adequate quality indicators, regular analyses
- d. Embed failsafe processes into screening pathway such as using IT system to track patients
- e. Develop benchmarking and feedback, external & internal QA
- f. Build a culture of Continuous Quality Improvement (CQI) including training

5. Consider research on causes of increasing thyroid cancer incidence (IARC can assist)

- a. Look at role of risk factors and consider role of screening by U/S on incidence.

Recommendations on management

1. Encourage centralization/concentration of cancer care to improve quality
 - Develop accreditation of centres for cancer care, considering the availability of qualified human resources, volume of cancer patients, existence of multidisciplinary teams and palliative care service in each center.
 - Develop a network of cancer care to ensure all the services can be accessed for patients no matter where they live or the primary centre where they are treated.
 - Develop a financing scheme that promote centralization and quality
2. Ensure cost free access to diagnosis of symptomatic patients and treatment for those cancers under early detection programs.
3. Update EOML based on new WHO EOML⁴; identifies those essential medicines that should be fully covered for all patients.
4. Develop guidelines for management of at least the most common and curable cancers (breast, colorectal, prostate, cervix, thyroid, etc), based on the scientific evidence, the resources in the country, and clearly define the priority options based on impact on survival and quality of life. The currently available resource-stratified guidelines developed by ASCO and NCCN could be of guidance⁵. The guidelines should be developed by a dedicated group including the most qualified cancer care professionals/specialists that are part of the multidisciplinary teams, the health authorities, the health insurances and the civil society (patients).
5. Encourage formal training for oncology nurses, radiation technologist (for radiotherapy, radiology and nuclear medicine) and cancer surgery of most surgical specialities managing cancer patients.
6. Assess the situation of the former National Oncology Centre and take a decision of restoring its activities at the required level of quality.

Recommendations on palliative care:

1. Improve access to opioids

- Ensure in the new decree on opioids that the maximal duration of prescription is at least one month, if possible 3 months
- Ensure in the new decree on opioids that all types of patient are entitled to be prescribed strong opioids in case of severe pain, whatever their background condition and also in case of condition that are not life-threatening (the most common conditions generating a need for opioids are provided in appendix).

⁴ <https://www.who.int/medicines/publications/essentialmedicines/en/>

⁵ Link to resource-stratified guidelines developed by ASCO and NCCN to be added

- Extend range of opioids available in the country and their formulation (see WHO guidance on list of medicines⁶)

2. Develop palliative care capacities and tackle fear of opioids

- Introduce PC as an obligatory course into the curricula of nurses and other medical professionals such as physiotherapists and psychologists, create a specialization in PC for nurse.
- extend the training provided in medical studies, notably with more information on use of opioids. Revise current training to tackle fear of opioids among specialists, family doctors, and nurses.
- Take the occasion of the publication of the new decree to run a series of state-organized courses on PC and use of opioids (including new regulation) for PHC doctors and nurses across the whole country. Ensure that new regulation is well understood by all professional dealing with patient in pain, at primary, secondary and tertiary levels of care (this mean a communication effort, i.e. updating website and making a comprehensive guidance available)

3. Adequately fund and develop PC services

- Allocate additional funds to develop PC services tertiary, secondary and primary health care (including home care), this to ensure significant savings on other fronts, notably oncology treatment, and emergencies care. The new WHO guide on Planning and implementing palliative care services may help in this⁷

⁶ WHO list of essential medicine for palliative care for Children and Adults are available from : https://www.who.int/ncds/management/palliative-care/palliative_care_services/en/ (page 81). List of palliative care medicines needed at primary health care level are available from : <https://apps.who.int/iris/bitstream/handle/10665/274559/9789241514477-eng.pdf?ua=1> (page 20)

⁷ Planning and implementing palliative care services: a guide for program managers: http://www.who.int/ncds/management/palliative-care/palliative_care_services/en/

Appendix 1: List of conditions that generate a need for palliative care

Opioids may be required for patients with the following conditions whether life-threatening or not:

- Cancer (all types),
- Cardiovascular diseases including arthrosclerosis, cerebrovascular disease and heart diseases
- Diabetes
- CNS: inflammatory disease of the CNS, neurologic conditions, degenerative diseases of the nervous system including the different forms of dementia, and Alzheimer's disease
- chronic respiratory diseases and other lung diseases
- decompensation of the organ-system(s) insufficiency, renal failure, diseases of the liver
- severe trauma (injury, burns, poisoning or musculoskeletal disorders) in need of symptomatic treatment;
- post-surgical pain and post childbirth pain
- HIV/AIDS, Tuberculosis and other serious infections
- congenital and hereditary diseases characterized by severe disorders such as those caused by metabolic diseases, chromosomal anomalies, genetic syndromes, muscle dystrophy, some forms of cerebral palsy, autism and more. permanent neurodevelopmental disability caused by infectious diseases

Palliative care may be also supplied for other patients, who are in need of symptomatic treatment and care, as other cases based on relevant diagnosis and professional opinion.