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The national integrated model of cancer care in Kazakhstan

As we all know, one of the main indicators in cancer care is cancer morbidity. In 2016, it was established about 37 thousand of the new cases of cancer. For further improvement of the quality of cancer care in Kazakhstan the national integrated model of cancer care was developed. Our integrated model is divided to three levels according to its functionality in each level of cancer care. Additionally, further improvement of Highly Specialized Centers for Radiation Oncology was also determined. Moreover, one of strategic goals of KazIOR is coordination of evolving of cancer care in the regions.

Keywords: national integrated model of cancer care, Highly Specialized Centers for Radiation Oncology. strategic goals of KazIOR

Kazakhstan Cancer Incidence and Mortality Data 1999-2016. As we all know, one of the main indicators in cancer care is cancer incidence. In 2016, 37 thousand new cases have been diagnosed and the total number of cancer patients according to Cancer Registry was over 163 thousand people [1]. This trend is increasing steadily in the country. Nevertheless, the incidence rate is lower compared to other OECD countries. Additionally, the

mortality rate is decreasing gradually, nearly two times between 1999-2016 (135,5 and 84,9 respectively). For further improvement of the quality of our registry data, we are modifying the methodology of data entrance according to IARC recommendations [2]. It should be noted that breast cancer is the most common cancer in Kazakhstan, but the main cause of cancer deaths are attributed to lung cancer.

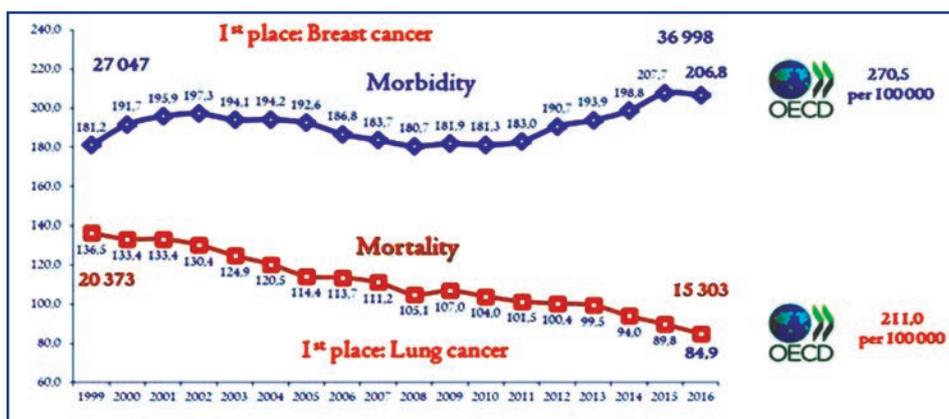


Figure 1 - Kazakhstan cancer morbidity and mortality data 1999-2016

In the context of age-specific cancer mortality - 70% of cancer patients were people of employment age and

43% of this group die the same year, it equals to nearly 7.000 people.

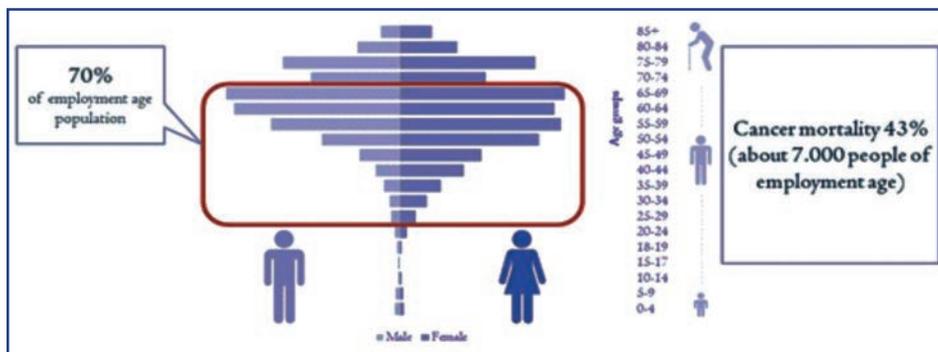


Figure 2 - Age-specific cancer mortality structure Kazakhstan, 2016

The Integrated Model of Cancer Care in Kazakhstan. According to our integrated model of cancer care, cancer care is divided into three levels, where the first level is represented by examination rooms and oncology cab-

inets in each primary care facility across the country (1 287 rooms). On the second level, we have 18 oncology centers in each region of Kazakhstan; these centers provide specialized cancer care and follow-up. KazIOR – the

Kazakh Institute of Oncology, as well as five high-tech diagnostic and radiology centers together with three pathology centers are providers of tertiary cancer care.

The total number of primary care oncologists and examination rooms are 368, and 1287 accordingly, the total number of exam rooms for men 380, for women 907.

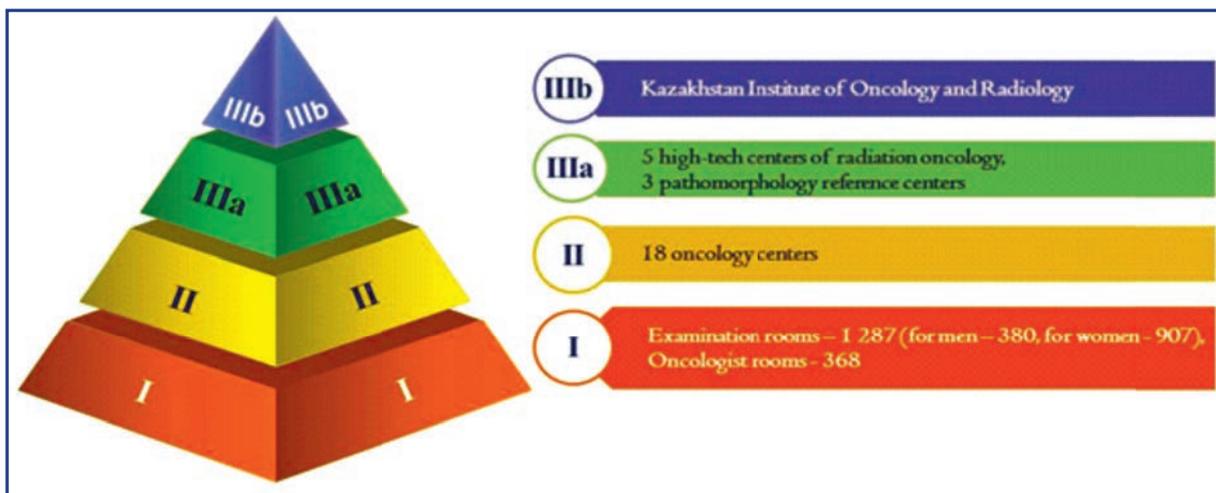


Figure 3 - Integrated model of cancer care in Kazakhstan

The key performance indicators for the quality assessment of cancer care has been modified and developed for each level of cancer care in Kazakhstan. In detail, the key performance indicators are following: for the 1st level settings the percentage of patients with cancer of visual sites, with stages III-IV (target - 17.1%) and with stage I (target - 23.7%); for the second level settings, mortality (target - 93.5 per 100 thousand) and 5 years overall survival (target is 48.1%). Finally, for the tertiary level set-

tings are – coverage with specialized cancer treatment (target is 87.6%) [3].

The structure of cancer care settings, which are being monitored and administered from Almaty (KazIOR) is presented in the picture-2.

Highly Specialized Centers for Radiation Oncology. Highly Specialized Centers for Radiation Oncology are created five major cities in Almaty, Astana, Karaganda, Semey, Aktobe. Moreover, as this centers are not enough

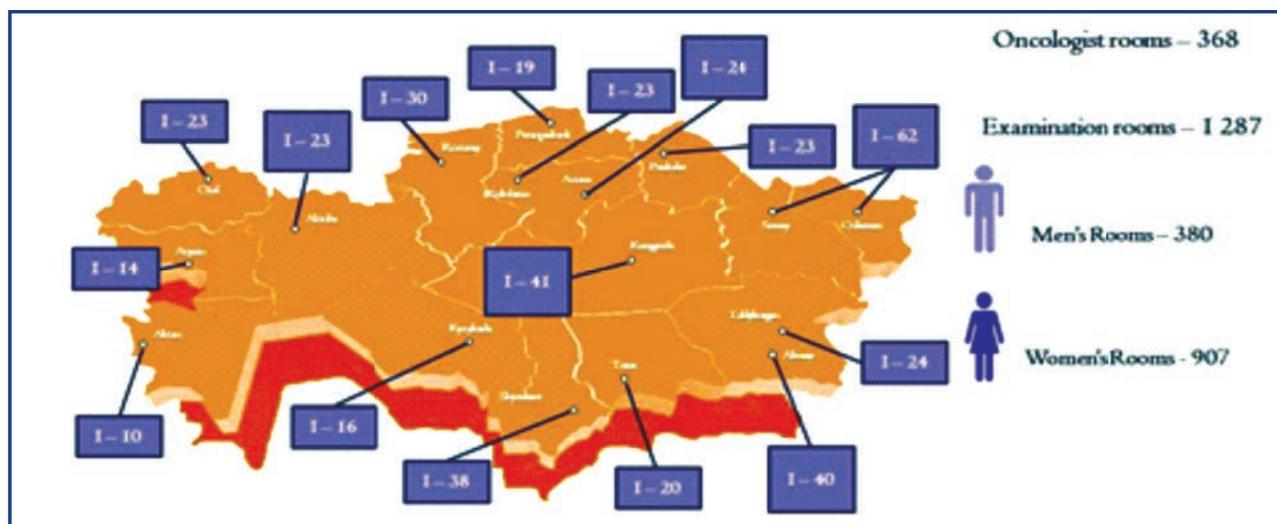


Figure 4 - First level of cancer care in Kazakhstan

to cover the demand in high-tech radiotherapy, the new centers will be launched in upcoming years [1].

Strategic and operational goals of KazIOR. As the KazIOR responsible for all cancer care delivered in Kazakhstan, it has the following Strategic and operational goals to improve cancer state in the country:

- The organization, coordination, monitoring, and evaluation of cancer care in the region.
- The development and implementing of high-tech methods of cancer diagnosis and treatment.
- The science development programs.
- Strengthening and development of human re-

sources.

- Development of palliative and rehabilitation care.

Science Development Programs in KazIOR. As any major institution in the world, one of main KazIORs goals is to develop scientific programs and increase the overall competence of our physicians. For that purpose, we expand the involvement of young oncologists in multi-center trials and encourage publications in international journals. In detail, between 2016-2017 we have been enrolled in several international clinical trials which are listed below:

- ROCHE - BO25114 Jacob – Clinical study of the effica-



Figure 5 - Highly specialized centers for radiation oncology in Kazakhstan



Figure 6 - Highly specialized centers for radiation oncology in Kazakhstan

cy and safety of Pertuzumab

- Implementation of diagnostic test of BRAF V600 mutation in patients with skin melanoma
- NOBEL – Study of patients diagnosed with chronic myelogenous leukemia under the Protocol Immun
- ATGen, Korea – NK Vue. And others.

Improvement of Prevention and Early Diagnosis.

There are available several diagnostic and treatment methods for all Kazakhstan citizens. For instance, cancer patients have access to palliative care and psycho-social support in all oncology centers. Currently, government funds six cancer screening programs to all citizens (breast, colorectal, prostate, cervical, gastric, esophagus cancers). Additionally, one of the important topics is personalized medicine – which helps to avoid unnecessary high-cost treatment and gives the possibility to deliver highly effective treatment to the exact patient [4].

Palliative care in Kazakhstan is being developed in collaboration with the Kazakhstan association for Palliative Care and Ministry of Health. Currently, we are working on the Strategic plan of Palliative Care. In detail, we possess total palliative beds – about 1,500 and trained specialists – around 6,700.

It is obvious that we cannot change the situation in cancer care without the support of our society. It is a

great challenge to increase the involvement of all population of Kazakhstan, science, schools, institutes, cultural, economic and business partners and others. We must admit that changing mindset of the general community to increase cancer awareness, early detection, and prevention – is the key mainstream in the future development of cancer care in Kazakhstan.

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