

DIGITAL MEDICAL COMMUNICATION STRATEGIES IN THE FIGHT AGAINST CORONAVIRUS

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During the diagnosis and treatment of patients with Covid19 coronavirus infection, an important task is to ensure safety and epidemiological safety of medical personnel. During the pandemic, the regional Phthisiopulmonology center deployed an infectious diseases Department with 250 beds. From March to August 2020, the Department treated 687 patients with coronavirus infection. To work in the infectious diseases Department, 595 medical workers were involved, including 176 from other medical organizations in the region.

One of the modern trends in the TB program is the introduction of video-monitored treatment (hereinafter referred to as VMT) [1], a method of remotely controlled treatment of tuberculosis patients in real time or in video recording mode. This method allows you to create conditions for providing affordable and comfortable specialized care for patients at the outpatient stage, as well as to eliminate barriers to their complete completion of treatment with anti-tuberculosis drugs.

Since 2017, the regional TB dispensary has purchased 115 smartphones, and the tariff plan for patients is paid monthly. Indications for selection for VMT were the presence of indications for outpatient treatment in the patient, the absence of an injectable drug in the treatment regimen, the patient's access to a permanent Internet connection, and skills in using the necessary equipment (smartphone and/or tablet).

By the order of the head of the medical organization, a responsible medical worker is appointed who performs VMT, and a regional coordinator for VMT is appointed in the regional dispensary. Designated responsible health workers are provided with constant access to the Internet during working hours, a computer or tablet or smartphone with downloaded applications for video communication.

The list of patients on VMT is approved at a meeting of the centralized medical Advisory Commission (hereinafter – CMAC) as part of the consultative and diagnostic Department of the regional center for Phthisiopulmonology [2] in accordance with the selection criteria. The location of the VMT is organized in any place where there is a sufficient Internet signal, as well as conditions for storing anti-TB drugs. The load per day for 1 health worker who conducts VMT is no more than 40 outpatient patients.

Using a smartphone, the patient, while at home, gets in touch with the health worker at a certain time, voices their first and last name, date, as well as the name of anti-tuberculosis drugs, and informs how they feel. A mandatory condition is to wash down the medication with water from a clear glass. The health worker, after making sure that the patient has swallowed the medication, makes a note in his journal that the patient received the prescribed dose of medication today. This is very convenient for patients, because tuberculosis is treated for a long time, at least six months, and the patient cannot stay in a medical facility all this time and this is not necessary, since this disease can be treated at home, remotely. The main thing is not to interrupt treatment.

As part of the development of information and communication technologies [3], software, WEB cameras, and microphones have been installed in 19 district and city organizations of the PHC region in order to ensure continuous monitoring of the treatment of tuberculosis patients and solve problematic issues. This made it possible to conduct panels, phthisiological hours, monitoring and evaluation of anti-TB measures, consultations of patients and CMAC without leaving your organization.

During the pandemic, communication was established between the infectious diseases Department and the conference hall via tablets, phones, and planning meetings. Tablets and phones for working only in the "dirty" zone



were placed at 5 medical posts, the Department of reanimation and intensive therapy, the emergency room and the recreation center of employees, which allowed for unhindered meetings, consultations, and conversations with patients without leaving the ward. Also, a channel was allocated for patients to connect their own WiFi devices (phone, laptop).

The Internet connection is 60 MB / s ping 8-10 (divided into three streams 30/20/10 MB / s). ZOOM provides HD video and audio for our conferences with support for up to 100 video participants and 49 on-screen videos. You can record the conference on a local drive or in the cloud. Built-in collaboration tools, multiple participants can share their screens and take notes for maximum interactivity. Encryption of all conferences, user security depending on the user's role, password protection, waiting rooms, and putting the participant in standby mode.

Improved patient adherence to treatment, minimal risk of acquired drug resistance, treatment failures and relapses, and reduced costs. In total, 236 patients were taken for VMT in 2019, including 1 case of separation from treatment, 4 patients were hospitalized in the region due to concomitant pathologies. During 2020, 170 out of 440 TB patients receiving outpatient treatment were taken for VMT, and there were no interruptions from treatment.

Conclusions

The use of digital technologies during the COVID19 pandemic has proved its relevance and cost-effectiveness, and has allowed for the control of tuberculosis. It is recommended that digital technologies be expanded for cross-sectoral interaction.

References

1. Order of the Minister of health of the Republic of Kazakhstan dated January 5, 2020 no. KR DSM-158 " On amendments to the order of the Minister of health and social development of the Republic of Kazakhstan dated February 2, 2016 no. 77 "On approval of the Standard of organization of medical care for tuberculosis";
2. Order of the Minister of health and social development of the Republic of Kazakhstan dated February 2, 2016 No. 77 "On approval of the Standard of organization of medical care for tuberculosis (changes as of February 02, 2016)";
3. Resolution of the Government of the Republic of Kazakhstan dated October 15, 2018 No. 634 "On approval of the State program for the development of healthcare of the Republic of Kazakhstan "Densaulyk" for 2016-2019".