Compendium of good practices on response to TB, HIV and viral Hepatitis during the COVID-19 pandemic

The COVID-19 pandemic has had negative impact on health service delivery and the response to them including for TB, HIV and viral Hepatitis. Since the beginning of the pandemic, countries, territories, partners and communities have put all efforts to adapt services to the situation. In order to document and disseminate successful examples in response to the three diseases during the pandemic, WHO/Europe has issued a compendium of good practices on response to TB, HIV and viral Hepatitis during the COVID-19 pandemic.

WHO EURO Virtual Library on Good Practices

Call for submission of good practices on response to TB,

PORTUGAL

Managing outreach services for sex workers during the COVID-19 pandemic: the PortoG TB case study

Fernanda Belizário[1]; Pedro Machado; Rita Neto; Ana Leite; Ana Carvalho

All authors affiliation is Piaget Agency for Development

Abstract

This case study presents the strategies used by the PortoG TB programme during the coronavirus disease 2019 (COVID-19) outbreak for prevention, screening and referrals for tuberculosis (TB) and sexually transmitted infections (STIs) in sex workers in Porto (Portugal). Whenever possible, the intervention privileged telephone contacts and online interactions in the place of face-to-face outreach strategies, resulting in the creation of new forms of face-to-face strategies, an expansion of the attendance area, and the adoption of drop-in approaches for delivering materials and strengthening advocacy strategies. The creation of innovative strategies was essential to maintaining contact with sex workers.

Overall, the project succeeded in adapting the PortoG TB programme to the new context created by the COVID-19 outbreak, ensuring proximity to the target population and continuity of service provision, in addition to acquiring more information on the reality of sex workers in the pandemic period.

Keywords

tuberculosis (TB), sexually transmitted infections (STIs), sex workers, COVID-19, Porto.

Background

APDES[2,3] is a Portuguese nongovernmental organization (NGO) that has developed interventions with sex workers under the PortoG programme since 2008. From 2019, APDES has run

[1] Corresponding author: fernanda.belizario@apdes.pt. Affiliation: Research Education and Community Intervention Unit (Instituto Piaget/Agência Piaget para o Desenvolvimento).

[2] APDES website, https://apdes.pt/en/home-en/

[3] APDES recognizes sex work as a voluntary contract to provide erotic services for financial gains, established (without duress) by adults. ADPES advocates for the full decriminalization of sex work and acknowledging that sex workers are entitled to labour

the PortoG TB[4] project, which is funded by the Portuguese Directorate-General of Health (DGS).[5] The PortoG TB project contributes to the prevention and control of tuberculosis (TB) in sex workers, from an intersectional perspective, in the city of Porto.

The scope of PortoG TB's intervention comprises:

- screening for sexually transmitted infections (STIs);
- application of the Tuberculosis Symptom Screening Questionnaire (TSSQ);
- referring people with a positive TSSQ to the Centros de Diagnóstico Pneumológico;[6]
- referring people with positive STI screening to reference hospitals;
- providing support for people using directly observed therapy (DOT) for TB;
- referring contacts; and
- accompanying people to preventive treatment appointments.

To widen the scope of the intervention, PortoG TB also distributes preventive materials for STIs (such as condoms and lubricant products), promotes health literacy through health and citizenship education, and works with peer educators (e.g. to assess the needs of sex workers).

This case study addresses PortoG TB's TB screening, prevention, referral and treatment intervention focused on Porto's sex worker population during March 2020 to January 2021. The study discusses the main achievements made in tackling the challenges for the intervention posed by the coronavirus disease 2019 (COVID-19) pandemic.

A conservative model has suggested that COVID-19 would anticipate a reduction in TB detection of 25% in 3 months, which would represent a 13% increase in TB deaths, regressing to the TB mortality levels of 2012 *(2,3)*. In addition, it is estimated an additional 1.4 million TB deaths could occur in the next 5 years as a consequence of the COVID-19 pandemic *(2)*. These numbers are likely to underestimate the effects of the pandemic on the TB burden as they do not consider other possible impacts on TB transmission, including treatment interruptions, comorbidities and the impact of the pandemic on already stigmatized populations, such as sex workers.

The COVID-19 pandemic had an unpredictable impact on everyone's daily lives, the organization of people's working lives, and on the immediate priorities of civil society. For sex workers, in addition to these disruptions, the pandemic increased social stigma and discriminatory behaviours, which undermined social cohesion

rights. APDES understands that approaches without moralism and sustained by Human Rights may translate into gains, even in terms of health *(1)*.

[4] PortoG TB was an harm-reduction outreach project developed by APDES that ran from 2019 until 2021.

[5] Portuguese Directorate-General of Health.

[6] The Centros de Diagnóstico Pneumológico (CDP) are Pneumological Diagnostic Centers, which are health units specializing in TB, with multidisciplinary teams of doctors, nurses and administrators. The existence of differentiated Health Units in Tuberculosis allows TB diagnosis and treatment to be managed in an integrated way in the community, and establishes partnerships with primary health care, hospital institutions and community structures *(4)*.

and increased risk behaviours, such as hiding illnesses to avoid discrimination *(3)*. In addition, the pandemic reduced access to health care, and increased the effects of the existing social and economic vulnerabilities that impact people's abilities to engage in the appropriate behaviour required to tackle both COVID-19 and TB.

Sex work was a hidden issue even before the pandemic, but the COVID-19 responses made it less visible, and the restrictions on the access to the health system made it even more difficult to bring formal health care to the sex worker population. Outreach projects strived to find solutions to ensure that the sex worker population had access to health care, and alternative models of interventions and proximity were proposed.[7]

Method & materials

PortoG TB is an outreach intervention based on a harm-reduction strategy (7,8). During the COVID-19 lockdowns, the project was obliged to suspend visits to sex work venues, accompanying people to social services, STI screening and vaccine administration. Electronic and mobile health strategies were prioritized, and, using these methods, the intervention continued. All the adaptations used resulted from feedback received by PortoG TB from outreach work with clients, and, in particular, from the feedback from the peer educator (a sex worker and venue owner), who played a crucial role in reporting the reality and dynamics of sex work during the COVID-19 lockdowns. The strategies used are outlined below.

(1) Transition from in-person consultations to telephone consultations

Telehealth follow-up was increased to: identify demands; maintain relationships of trust and close contact; maintain the linkage to care; disseminate reliable information; TSSQ application and health literacy promotion for TB; provide referrals to health facilities; and provide psychosocial support. Telephone contact was also fundamental to promoting catch-up strategies, carrying out an advocacy action plan assessing the community's main needs and reacting to the responses of the health structures provided for clients' needs.

(2) Expansion of the attendance area from the city of Porto to provide wider geographical coverage

The sex worker population in Portugal is diffuse and itinerant, with the majority of sex workers staying in one venue for up to a month and then moving elsewhere to access different markets. To scale-up the intervention and monitor the needs of the attendees, the attendance area was extended to include 12 cities; i.e. the majority of cities in the Porto Metropolitan area. This expansion allowed the team to enhance its capacity to support users and provide referrals to various services when requested.

(3) Using different channels to distribute preventive materials for STIs

Deliveries of preventive materials for STIs were carried out via community distribution points, and

[7] The modifications in services provision due to COVID-19 followed the guidelines for communicable diseases provided in the Interim Guidance of the World Health Organization for COVID-19 *(1)*, the recommendations of the Portuguese Directorate-General of Health *(5)* and recent data published by European Centre for Disease, Prevention and Control *(6)*.

secondary deliveries via peers were encouraged. Preventive materials were also distributed by post and a drop-in location was established for delivery, with a brief in-person contact.

(4) Reinforcing the electronic and mobile health strategy using WhatsApp and social media

An electronic and mobile health strategy using WhatsApp and social media was developed through research, and the creation and publication of content on: harm reduction, health and sex work, COVID-19 and advocacy for sex workers' rights.

(5) Use of facility-based activities in Porto and a new protocol for in-site interventions

A partner NGO offered one of its facilities in Porto to PortoG TB for conducting STI screening/vaccinations and TSSQ application to re-establish part of the programme's on-site services. PortoG TB also reinforced its in-person interventions by adopting new measures in the period after the lockdown. The outreach work visits were only used for the delivery of preventive and informative materials for STIs; face-to-face contact was conducted outdoors and limited to contact with only one sex worker per facility.

(6) Advocacy

Given the lack of labour rights or social protection measures that are available to sex workers, strategies to strengthen advocacy for sex workers were undertaken during this period. These strategies included making contact with the press and writing an open letter to the Minister of Labour, Solidarity and Social Security to raise awareness of the specific vulnerability of this population.

Results

Sex work combines several vulnerabilities, including dissident gender identity and/or sexual orientation, vulnerable migration status, and people living with HIV. During the pandemic period, these and other vulnerabilities accentuated the needs of the sex worker population, with regards to access to health care (predominantly for migrants), psychosocial support (e.g. support for basic needs, such as access to food) and availability of preventive materials for STIs. The adaptations and strategies introduced by PortoG TB were effective in that they allowed PortoG TB to maintain proximity with the sex worker population, and to provide continuity of essential psychosocial and health responses.

The expansion of the attendance area allowed PortoG TB not only to maintain its previous contacts but also to reach a greater number of people.

Even though PortoG has been in existence since 2008, the PortoG TB project was a pioneer intervention that started in December 2019 and ended in January 2021. This means that it is not possible to compare the data presented here, collected between March 2020 and January 2021, with data from previous years. However, this data will, whenever possible, be compared with the expectations that were predicted when the project was planned.

The project reached a total of 262 people, compared with the 150 people predicted. Out of these 262 people, 124 people completed the TSSQ

(25 people answered it twice), allowing a semestral follow-up. Only two of the completed TSSQs were positive, and these individuals were both found to be negative for TB upon testing.

Alongside the TB diagnosis work, the team conducted extensive work on the prevention and promotion of health literacy with a focus on TB: 155 TB health-literacy opportunities were promoted, 150 informative materials were distributed, and 25 pieces of online content were produced (on the prevention, diagnosis and treatment of TB). A greater number of these activities were carried out than initially predicted.

The team established a total of 491 contacts with the key risk population for TB.

For STI prevention, PortoG TB conducted 137 rapid STI tests, and distributed 107 916 condoms and 28 878 lubricant products (slightly fewer than the numbers distributed in the same period in the previous year – 141 147 condoms and 36 904 lubricant products).

Another aspect to highlight is maintaining partnerships and communication between organizations. The previous existence of partnerships with health structures allowed the team to keep channels open to allow the referral of priority cases, especially in the most critical phase of the lockdowns when access to health services was severely restricted. PortoG TB also participated in a WhatsApp group formed by a group of Portuguese NGOs who work with vulnerable populations (sex workers, people who use drugs, migrants, etc.) and contributed to a national resource guide. This allowed PortoG TB to have access to the responses that each organization was running in the context of the pandemic. This period also involved a reinforcement of communication with local power structures, and an activation of social support responses.

Given the weight of the telematics dimension, this adapted intervention model has been shown to involve fewer costs compared with a face-to-face/traditional outreach model.

Discussion

Some of the adaptations introduced due to the pandemic are sustainable strategies that could be replicated either during a pandemic or at any other time. The electronic and mobile health strategy had a prominent role during the lockdowns and this will continue, especially for implementing advocacy strategies, creating harm-reduction content and improving TB health literacy, as digital media platforms have proven themselves to be powerful tools for reaching new people. This also applies to telehealth contacts, which have remained the main strategy for assessing attendees' needs and for the TSSQ application. Using these methods, the PortoG TB team was able to adapt its work on TB and STIs to the adverse and limiting context caused by the pandemic. In fact, the use of telematic means, combined with expanding the geographical coverage of the intervention, especially for applying TSSQ or DOT for tuberculosis, can be an effective and sustainable strategy that is capable of reaching a larger population at lower cost.

However, face-to-face interventions remain essential, as some of the outreach-based provisions could not

be replaced, including: access to actors and contexts of sex work (and its ethnographic dimension); facilitating the creation of relationships of trust and empathy with users; and providing services such as screening, vaccines, etc.

The role of civil society is, therefore, extremely important to addressing these realities, both by enabling access to the actors and contexts considered to be priorities, and for the ability of civil society to communicate with formal health structures. Therefore, what is needed now is to capitalize on the partnership with civil society to reinforce the use of fast-track procedures, and the partnerships with other organizations (such as NGOs), to ensure the sustainability of the intervention, either during exceptional periods or at any other time.

However, most civil society organizations, including APDES, that provide outreach responses face serious constraints that constantly threaten service sustainability. These constraints derive predominantly from the paradigm of state funding. In addition to the constant uncertainty about the continuity of the funding, the available funding allocates low value resources and only makes provision for very short periods to execute interventions. It therefore becomes very challenging for NGOs to maintain responses and services that have demonstrated their effectiveness and their potential to adapt to new contexts for interventions.

PortoG TB's team included a peer worker who was a crucial element in PortoG TB's ability to evaluate a population's needs and report urgent situations occurring within the community. The peer worker proved to be useful for disseminating information (on COVID-19 measures, TB prevention and testing, sex workers' rights, etc.) to sex workers. For future interventions, it is vital to consider funding diverse teams that include peer workers, and funding peer-led interventions.

Conclusion

Although sex workers are not considered a target population for TB public health programmes, Porto G advocates for the inclusion of the sex worker population in health campaigns, since the working conditions of this population lead to a intersection of vulnerabilities for TB infection, including: TB/HIV comorbidity, indoor workplace conditions with low ventilation and many people; the mobile nature of the work and the requirement for contact with people throughout the country and abroad; and, for migrants, the difficulties in accessing the health system, which is relevant as migrants make up at least 80% of the sex worker population.

The COVID-19 pandemic led to the enactment of successive States of Emergency in Portugal. Along with many other organizations, outreach-based civil society organizations were obliged to redefine their interventions and adapt the services provided to a context of lockdowns, among other constraints.

Most sex workers suspended their activities, and followed all the guidelines of the Portuguese Directorate-General of Health and the gradual reopening plan proposed by the state.

With the specifics of sex work in mind, the PortoG TB team sought to work using the logic of harm reduction, by guiding and supporting with clear and targeted information, either for TB or for STIs. This necessarily redefined the concept of outreach work and had an impact on the strategies previously

implemented, resulting in providing telehealth follow-ups, online and telephone consultations, and using electronic health and mobile health strategies for clients, which led to an expansion of the geographical scope of intervention.

In general terms, at the start of the pandemic, the team sought to adapt its practice to:

- maintaining contact with the target population and meeting their needs, for both TB and STI prevention;
- maintaining the application of the TSSQ, referring suspected cases to the appropriate health structures and, if necessary, monitoring DOT through telehealth strategies;
- raising awareness among health partner organizations about the importance of maintaining open service routes;
- reinforcing communication with partner structures;
- sensitizing, monitoring and supporting the sex worker population to adopt safer and alternative practices of sex work (live streaming, for example);
- monitoring and reporting the reality of sex work (and the needs of its professionals) with reference to entities or organizations;
- developing a set of appropriate responses to the new reality and the needs arising in the target audiences.

In short, despite the constraints raised by this period, particularly in terms of the suspension of some structural responses and the redefinition of the concept of outreach work, the process of adapting services to a new reality eventually triggered practices that, working with a harm-reduction logic, are likely to be replicated in the post-pandemic period, and will also be used with different key populations. Overall, TB screening should be part of organizations' comprehensive approaches, simultaneously integrating different preventive measures for the benefit of all intervention areas.

References

1. Platt L, Grenfell P, Meiksin R, Elmes J, Sherman SG, Sanders T, et al. Associations between sex work laws and sex workers' health: A systematic review and meta-analysis of quantitative and qualitative studies. PLoS Med. 2018;15(12):e1002680.
2. WHO. Essential health services: Operational guidance for the COVID-19 Context: Interim Guidance. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/332240, accessed 9 June 2022).
3. WHO. Updated WHO information note: Ensuring continuity of TB services during the COVID-19 pandemic, 15 December 2020. Geneva: World Health Organization; 2020 (https://www.who.int/docs/default-source/hq-tuberculosis/covid-19-tb-clinical-management-info-note-dec-update-2020.pdf?sfvrsn=554b68a7_0, accessed 9 June 2022).
4. Direção-Geral da Saúde. Tuberculose: Centros de Diagnóstico Pneumológico. Lisbon: Direção-Geral da Saúde; 2020 (https://www.dgs.pt/paginas-de-sistema/saude-de-a-a-z/tuberculose1/centros-de-diagnostico-pneumologico.aspx Direção-Geral da Saúde, accessed 9 June 2022).
5. Ministério da Saúde, Direção-Geral da Saúde, Portugal. Tuberculose em Portugal: desafios e estratégias 2018. Lisbon: Direção-Geral da Saúde; 2018.
6. ECDC. Tuberculosis surveillance and monitoring in Europe 2020–2018 data. Stockholm: European Centre for Disease Prevention and Control. WHO Regional Office for Europe; 2020 (https://www.ecdc.europa.eu/en/publications-data/tuberculosis-surveillance-and-monitoring-europe-2020-2018-data, accessed 9 June 2022).
7. APDES. Lines of intervention. Porto: APDES; 2018 (https://apdes.pt/en/lines-of-intervention/, accessed 9 June 2022).
8. Harm Reduction International. What is harm reduction. London: Harm Reduction International; 2020 (https://www.hri.global/what-is-harm-reduction, accessed 9 June 2022).

MOLDOVA

Tuberculosis active case-finding by civil society organizations in Moldova

Stela Bivol, Lucia Pertina, Valentina Vilc, Sofia Alexandru

Center for Health Policies and Studies, the Institute of Phtisiopneumology "Chiril Draganiuc"

Abstract

The Republic of Moldova is a high tuberculosis (TB) burden country in the World Health Organization European Region. In 2020, disruptions in TB services caused by the COVID-19 pandemic, including the reallocation of human, financial and other resources from TB to the COVID-19 response, contributed to a significant reduction in TB case notifications, with 37.7% fewer cases reported compared with the equivalent 9-month period in 2019. To improve the TB case notification rate, Moldova's National TB programme and civil society organizations (CSOs) joined forces to maintain essential TB and COVID-19 services using a strategy of active case-finding based on screening people from groups at high-risk of TB with chest X-rays and providing support during any subsequent medical consultations.

During the study period, a total of 5 129 people were screened by chest X-ray: 24.1% of these were people with drug or/and alcohol addictions, 20.5% were people with diabetes, 15.7% were contacts of people with TB, 4.8% were people with sequalae of TB, 3.7% were people who were homeless, and the remainder (31.1%) were migrants and other socially vulnerable people. Of the 5 129 people screened, 60 (1.17%) people were diagnosed with TB.

The community-based active case-finding in Moldova was effective, contributing to improved case detection in patients from vulnerable groups, shortening diagnostic delays, and successfully bringing patients into the TB treatment programme.

Background

The Republic of Moldova is a high tuberculosis (TB) burden country in the World Health Organization (WHO) European Region, and TB is a current priority public health problem. Moldova also has a high multidrug-resistant (MDR)-TB burden (33% of new and 60% of re-treatment cases). Since 2005, there has been a slight downward trend in both TB incidence and mortality in Moldova. In 2019, 2 879 people were either newly diagnosed with TB or were relapse

cases, a rate of 71.7 per 100 000 population, which is a 4.5% reduction compared with 2018 and a 20.2% reduction compared with 2015. In 2020, disruptions to TB services caused by the COVID-19 pandemic, and the reallocation of human, financial and other resources from the TB to the COVID-19 response, contributed to a significant reduction in TB case notifications, with 37.7% fewer cases reported compared with the equivalent 9-month period in 2019 (Table 1).

MOLDOVA

Table 1 Decrease in TB notification rates in Moldova, 2019 and 2020

Indicator	2019 (9 months)	2020 (9 months)	Decrease (%)
New and relapse cases	2 223	1 384	37.7
Initiated treatment (all cases)	2 544	1 573	38.2
Initiated treatment (RR/MDR-TB cases)	679	417	38.6

MDR: multidrug-resistant; RR: rifampicin-resistant; TB: tuberculosis.

To improve the TB case notification rate, Moldova's National TB programme and civil society organizations (CSOs) joined forces to maintain essential TB and COVID-19 services using a strategy of active case-finding based on screening people from groups at high-risk of TB with chest X-rays and providing support during subsequent medical consultations.

Methods

This is a descriptive study using routine programme data from October to December 2020. The case detection algorithm involved used chest X-rays (CXRs) to screen people in high-risk groups (people with diabetes, people with drug or/and alcohol addictions, people with post-TB sequelae, contacts of people with TB, people living with HIV), who were identified by primary care providers, followed by medical consultations and the use of sputum microscopy to confirm TB diagnoses.

A service package was developed which involved:

- developing lists of people who would be offered screening;
- providing counselling;
- providing transport and accompanying people to CXRs;
- accompanying people to medical consultations and to confirmatory sputum microscopy;
- accompanying people to medical consultations to discuss treatment.

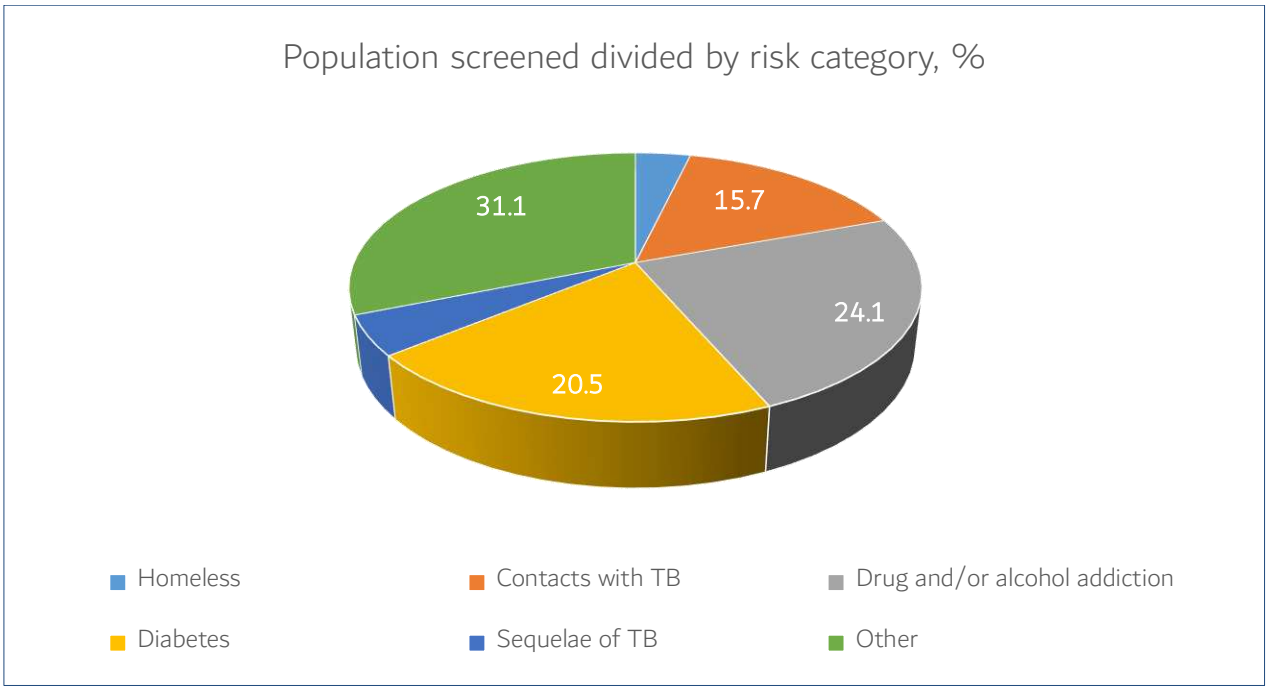
Results

During October–December 2020, in eight districts and municipalities in Moldova, a total of seven civil society organizations (CSOs) systematically screened people in high-risk groups for TB, selected based on decline in TB case notification. The CSOs collaborated with primary care providers and the local public authorities to develop lists of the people to be screened. The CSOs also collaborated with the specialized outpatient medical services providing radiological assessments to establish out-of-hours screening schedules (as CXRs were for COVID-19 use only during normal operating hours), to ensure access to the service and avoid extended waiting times. The CSOs provided transport to CXRs and accompanied people being screened. The CSO team sent the resulting CXRs to TB specialists or the family doctor. If

required, individuals were accompanied to specialist doctors for further diagnostic procedures.

During the study period, a total of 5 129 people were screened by CXR: 24.1% of these were people with drug or/and alcohol addiction, 20.5% were people with diabetes, 15.7% were contacts of people with TB, 4.8% were people with the sequalae of TB, 3.7% were homeless and and the remainder (31.1%) were migrants and other socially vulnerable people.

Figure 1 Population screened divided by risk category, %



Of the people screened using the case detection algorithm implemented by CSO involvement, 60 (1.17%) people were diagnosed with TB. In addition, other disorders of the respiratory system were identified, including post-TB sequelae, post-inflammatory sequelae, pneumonia, lung cancer, fibrosis, pleuritis, cardiomegaly, pneumosclerosis.

Discussion

This study of active case-finding using a case-detection algorithm based on CXR screening people from groups at high-risk of TB with the support of CSOs has demonstrated satisfactory yields and outcomes. This study provides an evidence base to inform future scale-up and sustainable implementation of active case-finding by CSOs in Moldova. The implementation of this study complemented the existing TB control strategies in Moldova.

Post-COVID-19 pandemic, there is an urgency to improve case detection, globally. However, case-finding will only succeed in reducing the burden of TB if effective treatment programmes are also available. When coupled with comprehensive treatment and care, active case-finding will significantly reduce TB incidence.

Conclusion

The community-based active case-finding in Moldova was effective, contributing to improved case detection in patients from vulnerable groups, shortening diagnostic delays, and successfully bringing patients into care. When applied to epidemiologically appropriate settings, and coupled with strong and effective DOTS (directly observed therapy short-course) programmes, active case-finding has the potential to substantially reduce TB incidence in high-burden areas.

Abbreviations

CXR: chest X-ray

CSO: civil society organization

MDR-TB: multidrug-resistant tuberculosis

RR-TB: rifampicin-resistant tuberculosis

TB: tuberculosis

References

National Tuberculosis Programme Republic of Moldova. Interim Report 2020.

Acknowledgements

The authors would like to acknowledge the NTP Coordinator Valentina Vilc for her support and advice on this project.

Ethics and permissions

The programme Manager of National Tuberculosis Programme approved to use the programme data for this study.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Patients with TB/COVID-19 coinfection in Belarus – a video-supported treatment (VST) solution

Alena Skrahina, Henadz Hurevich, Aliaksandr Skrahin, Dzmitry Klimuk, Varvara Solodovnilova, Dzmitry Viatushka
The Republican Scientific and Practical Centre for Pulmonology and Tuberculosis, Minsk, Belarus

Abstract

In Belarus, the COVID-19 infection rate in tuberculosis (TB) patients was studied between February and November 2020. The National TB Programme (NTP) responded to the COVID-19 pandemic by expanding the use of video-supported treatment (VST) for TB patients. The low numbers of COVID-19 diagnoses among the TB patients who were using VST suggests that VST may facilitate compliance with social distancing measures, thus reducing the risk of COVID-19 acquisition.

Background

In Belarus, the first case of COVID-19 in the country was registered on 28 February 2020. By 25 November 2020 more than 122 000 cases COVID-19 had been reported, with more than 1 200 deaths. More than 3.1 million COVID-19 tests had been conducted in this period [1]. During June to August 2020, the situation with COVID-19 had stabilized; however, in September 2020, an increase in the incidence rate was recorded, with up to 2 000 new cases per day.

Video-supported treatment (VST) for patients with TB was introduced in Belarus in 2016. The client part of the software is installed on patients' smartphones, and the server part is integrated into the National TB Electronic Register. TB patients' smartphones are predominantly procured by the NTP using the Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) grant sources. In 2019, an additional 500 smartphones were purchased, and permission to provide smartphones to patients with drug-susceptible TB (DS-TB) was given. It is also possible to install VST software onto patients' personal smartphones, which significantly expanded the number of patients using VST.

VST is used for TB patients throughout Belarus, and its use is sustainable and provides high treatment efficiencies. Of the 1 080 VST patients who completed treatment in 2016–2020, the treatment success rate was 98.5% (393/399) in the DS-TB cohort (including 96.7% (29/30) of patients with HIV/DS-TB coinfection) and 95.2% (648/681) in the multidrug-resistant TB (MDR-TB)

cohort (including 91.4% (43/47) of patients with HIV/MDR-TB coinfection).

In order to reduce the risk of spreading COVID-19 among TB patients, the NTP decided to maximize the provision of VST [2].

Method & materials

This is a nationwide retrospective observational study. The study data were based on information from taken the National TB Electronic Register and COVID-19 emergency reporting forms. Data were collected and analysed by the Monitoring and Evaluation Department of the Republican Scientific and Practical Centre for Pulmonology and Tuberculosis, Belarus.

Results

In Belarus, as of 25 November 2020, 1 891 patients with active TB were on inpatient or outpatient treatment. During 28 February to 25 November 2020, 84 patients with COVID-19/TB coinfection were registered (4%), including 78 pulmonary TB cases (93%) and six extrapulmonary TB (7%) cases. Of the pulmonary TB cases, 45 (58%) were MDR-TB cases; the remaining 33 (42%) were DS-TB cases. The majority of pulmonary TB cases (n = 58; 74%) cases were treated for TB in hospital; 20 (26%) TB cases were on outpatient treatment.

Most patients with COVID-19/TB coinfection (88%) had mild COVID-19 symptoms and did not require treatment for COVID-19. Of these, 75 (89%) patients recovered from COVID-19, eight patients are still on treatment, one patient died of sudden death (COVID-19 was only confirmed at the autopsy). Four patients with COVID-19 of moderate severity received COVID-19 treatment because they were also being treated for TB/MDR-TB. No adverse events were recorded.

Repeated COVID-19 testing in the hospitalized TB patients identified 17 (30%) asymptomatic COVID-19 patients. COVID-19 screening was not carried out at outpatient settings, therefore it was not possible to detect asymptomatic COVID-19 patients in these settings.

To stop the spread of COVID-19, additional measures were introduced in hospitals, including: comprehensive, repeat COVID-19 testing for all patients and health care workers, separation of patient flows at admission, isolation of COVID-19-positive patients, use of personal protection equipment, and employing additional medical personnel.

From March to November 2020, the cumulative number of TB patients on VST increased from 1 168 to 1 523. Each month the percentage of patients using VST increased between by amount ranging between 5.6% and 11.2%; for comparison, during 2019, the range of increases each month was 2.2–2.7%. COVID-19 was only diagnosed in four TB patients who were receiving VST.

Discussion

In Belarus, the proportion of TB patients with COVID-19/TB coinfection was 4%, and the majority of those with COVID-19/TB coinfection had mild COVID-19. Only 16% of patients with COVID-19 TB/MDR-TB coinfection needed treatment for COVID-19; this treatment was well

tolerated. As one case of COVID-19 was only detected at autopsy, it is apparent that not all cases of COVID-19/TB coinfection were diagnosed and suggests the need for comprehensive, repeat COVID-19 testing in all TB patients.

In Belarus, VST for patients with TB has been provided since 2016. The client part of the software is installed on the patients' smartphones, the server part is integrated into the national electronic register "Tuberculosis". The main number of smartphones (provided to the patient for the entire course of treatment and cannot be returned) is procured from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) grant. In 2019, GF purchased an additional 500 smartphones, and also gave permission to provide smartphones to patients with drug-susceptible TB. The software can also be installed on the patient's personal smartphone, which significantly expands the possibilities of using the VST.

Belarus occupies a high position in the final report of the Broadband Commission, created under the auspices of UNESCO. In Belarus, 31.35 per 100 inhabitants subscribe to broadband. The number of mobile broadband subscribers (who use 3G and 4G technology) puts Belarus in 59th place, with 61.83 users per 100 inhabitants [3].

The low numbers of TB patients on VST among people with COVID-19 diagnoses suggests that VST may facilitate compliance with social distancing measures, thus, reducing the risk of COVID-19 acquisition.

Conclusion

According to our observational study, use of VST for TB patients is a sustainable, countrywide practice with a high success rate. Out of 1 080 patients who completed TB treatment in 2016–2020, the treatment success rate was 96.6%. As Belarus has a large number of smartphone users and widespread mobile Internet coverage, VST can be offered to significant number of TB patients.

COVID-19/TB coinfection is a concern for the Belarus Health Care system and the NTP. Measures, such as comprehensive repeat COVID-19 testing of TB patients and TB health care workers, separation of TB patients flows at hospital admission, isolation of positive COVID-19 patients, employing additional medical personnel and the use of individual protection equipment for hospital personnel and patients, are effective in stopping the spread of COVID-19 infection.

VST can be considered as an additional effective measure to enable social distancing for TB patients. Our study showed that although 84 COVID-19/TB cases were recorded in the country during February 28–25 November 2020, there were only four patients with COVID-19/TB coinfection among the TB patients who used VST.

References

1. COVID-19 coronavirus pandemic, 2020 (https://www.worldometers.info/coronavirus/?#countries, accessed 25 November 2020).
2. Skrahina A, Grankov V, Hurevich H, Klimuk D, Akulov V, Dara M. Belarus experience in video observed treatment for tuberculosis patients. European Respiratory Journal 2019 54: PA4624; DOI: 10.1183/13993003.congress-2019.PA4624
3. The State of Broadband 2020: Tackling digital inequalities – A decade for action Year: 2020. UNESCO (http://handle.itu.int/11.1002/pub/8165dc3c-en, accessed 25 November 2020).

RUSSIAN FEDERATION

The experience of the Central TB Research Institute – the National Centre of Excellence of the WHO Supranational Reference TB Laboratories Network – in the prevention of the spread of SARS-CoV-2 infection (COVID-19)

Smirnova TG, Andreevskaya SN, Larionova EE, Sevastyanova EV, Chernousova LN, Ergeshov A.
Central TB Research Institute, Moscow, the Russian Federation

Summary

In this article, we share the experiences of the Microbiology Department of the Central TB Research Institute (CTRI) during the COVID-19 pandemic. We propose an original approach based on the latest developments in the rapid diagnosis of TB/mycobacteriosis and SARS-CoV-2 infection, which allows test results to be obtained within several hours of sample collection. The updated algorithm has optimized diagnosis and improved testing effectiveness, which is crucial for TB institutions in the current situation.

Introduction

The global coronavirus disease 2019 (COVID-19) pandemic, caused by the SARS-CoV-2 virus, fundamentally altered the performance of diagnostic laboratories with many of them having to change focus to carry out SARS-CoV-2 testing, reducing their capacity to provide medical services for other diseases, including tuberculosis (TB).

During the COVID-19 pandemic, the Microbiology Department in the Central TB Research Institute of the Russian Academy of Medical Sciences (CTRI) worked hard to maintain the provision of the TB diagnostic algorithm used since 2011. This algorithm combines two rapid methods for *M. tuberculosis* detection and drug-resistance determination in two stages. The first stage uses molecular genetic screening methods to confirm the presence of *M. tuberculosis* and determine genotypic resistance to rifampicin, isoniazid or fluoroquinolones within 24 hours of sample collection. The test results are used to separate patient flows: patients with multidrug-resistant TB (MDR-TB) are hospitalized in the specialized TB department. In the second stage,

the automated BACTEC MGIT 960 system is used to obtain culture test results and determine phenotypic drug resistance. These results are used to prescribe to patients individualized chemotherapy regimens containing drugs for which susceptibility has been preserved [1,2,3]. From the outcomes of the implementation of this algorithm, methodical recommendations on the improvement of pulmonary TB diagnosis and treatment were developed; these recommendations were endorsed by Edict no. 951 of the Russian Federation Ministry of Health, as of 29 December 2014 [4,5].

In the past few years, the first stage of the algorithm has been expanded to allow the rapid differentiation between TB and mycobacteriosis. Nontuberculous mycobacteria (NTM) often cause pulmonary diseases in immunodeficient people and, in particular, people living with HIV, and the clinical presentations of nontuberculous mycobacteriosis are very similar to those of TB. NTM show natural resistance towards many TB drugs so the lack of adequate differentiation can lead to mycobacteriosis being misdiagnosed as totally drug-resistant TB. This research area has been prioritized as rapid, simple tests for NTM from diagnostic samples are not yet in general use.

In this article, we share the experiences of the CTRI Microbiology Department during the COVID-19 pandemic. We describe the alterations made to the first stage of the diagnostic algorithm, increasing the effectiveness and improving our test results in the current situation.

Materials

We present the results of tests run on diagnostic samples taken from pulmonary TB patients admitted to CTRI, patients from the Centre for Diagnosis and Rehabilitation of Bronchopulmonary Diseases at CTRI, and CTRI employees.

All tests were performed using domestic diagnostic kits (Syntol JSC, Russia): Amplitube-RW for isolation, detection and quantification of *Mycobacterium tuberculosis* complex (MTBC) DNA by real-time PCR; Amplitube-MLU-RW for determination of genotypic resistance to rifampicin or isoniazid; Amplitube-FQ-RW for determination of genotypic resistance to fluoroquinolones; OT-PCR-RW-SARS-CoV-2 for detection of SARS-CoV-2 RNA. The TECAN Freedom EVO 150 robotic system (TECAN, Switzerland) was used for DNA/RNA extraction. A CFX96 Optical Module thermocycler (Bio-Rad, USA) was used for amplification.

Methods and results

The TB rapid diagnosis algorithm endorsed for use at the CTRI Microbiology Department is highly effective for TB control. However, detection and identification of NTM with this algorithm are only possible using culture media inoculation and identification. The CTRI Microbiology Department, in collaboration with Syntol JSC, has developed two original test-systems based on multiplex real-time PCR to differentiate between TB and mycobacteriosis from the diagnostic samples used in the first stage of the algorithm.

The first test detects MTBC/NTM DNA from one sample within 3 hours. This test is based on the Amplitube-RV kit (Syntol JSC) to detect MTBC DNA supplemented by primers targeting the *meth* and *tuf* genes, which are specific for most mycobacterial DNA [6, 7]. The test demonstrates good diagnostic characteristics: sensitivity for MTBC detection is 93.5%, NTM detection is 74.2%; specificity is 100% (Table 1).

The second test enables 12 NTM species to be simultaneously identified: Mycobacterium avium, Mycobacterium abscessus, Mycobacterium chelonae, Mycobacterium fortuitum, Mycobacterium gordonae, Mycobacterium intracellulare, Mycobacterium kansasii, Mycobacterium lentiflavum, Mycobacterium mucogenicum, Mycobacterium peregrinum, Mycobacterium smegmatis, Mycobacterium xenopi. Sensitivity for determining the NTM species directly from diagnostic material was 99.71%, with a specificity of 100% (Table 1).

Table 1 Sensitivity and specificity of reagent kits used in the CTRI Microbiology Department

Diagnostic kit		Sensitivity (%)	Specificity (%)
Amplitube-RV kit for MTB/NTM detection (Syntol JSC)	MTB	93.5	100
	NTM	74.2	100
Kit for simultaneously identifying 12 NTM species (CTRI, Syntol JCR)	NTM species	99.7	100
OT-PCR-RV-SARS-CoV-2 kit (Syntol JSC)	SARS-CoV-2	96.2	100

During the COVID-19 pandemic, the laboratory workload more than doubled, as SARS-CoV-2 testing is required for employees and patients alongside routine testing for specific diseases. The increased workload was apparent as soon as the CTRI Microbiology Department was enrolled on the register of laboratories authorized to perform SARS-COV-2 testing. To optimize labour costs, we automated the pre-analytical stage of molecular genetic diagnosis. This approach had to take into account that MTBC/NTM detection needs DNA analysis and SARS-CoV-2 detection needs RNA analysis. Therefore, to obtain the necessary diagnostic samples required for diagnosing mycobacterial and SARS-CoV-2 infections in a single working cycle of a robotic station, a reagent kit was required which allowed the simultaneous detection of DNA and RNA; for example, M-Sorb-NK, a component of the OT-PCR-RV-SARS-CoV-2 kit (Syntol JSC, Russia). The use of the kit did not decrease the sensitivity or specificity of PCR testing for MTBC/NTM detection compared with the conventional system used for DNA extraction. Our specialists developed software for the robotic station that allowed up to 96 samples to be processed per round.

These changes allow the Microbiology Department to carry out the diagnostic tests for simultaneous diagnosis of TB/mycobacteriosis and SARS-CoV-2 as follows. Samples are collected from patients. Sputum samples are used for preference, as, according to our data, SARS-CoV-2 sputum tests allow viral RNA to be detected one day before disease manifestation in 20% of cases. Samples are aliquoted before decontamination and the unprocessed portion is used for automated DNA/RNA extraction. PCR testing is then carried out on the extracted nucleic acids to detect SARS-CoV-2 and MTBC/NTM (Fig. 1).

At CTRI, both employees and TB patients are tested weekly for SARS-CoV-2. On hospital admission, patients are obliged to undergo simultaneous examination for both MTBC/NTM and SARS-CoV-2. Patients with negative COVID-19 tests are placed on an observation ward and retested on Days 3, 5 and 8 after hospitalization. If all tests are negative, the patient is transferred to a therapeutic department, once the genotypic drug-resistance data are available.

The implementation of the algorithm adapted to the COVID-19 pandemic allowed 4 924 tests for TB/mycobacteriosis to be carried out in 2020 and 9 488 tests for SARS-CoV-2 – from June to the end of 2020. This demonstrates the high effectiveness of our approach.

Discussion

The diagnostic algorithm proposed by CTRI and adapted to the COVID-19 pandemic has addressed a number of problems that have arisen during the pandemic.

First, the algorithm optimizes labour costs during the increased workload by automating tests, and the simultaneous detection of mycobacteria and SARS-CoV-2 from one sample in a working cycle of the automated station. Reverse transcription PCR testing is used for SARS-CoV-2 infection diagnosis [8].

Second, in the context of the COVID-19 pandemic, it is crucial to prevent nosocomial transmission of SARS-CoV-2 infection; consequently, all employees and patients regularly undergo SARS-CoV-2 testing. Sputum samples are effective for SARS-CoV-2 detection, as described elsewhere; and their use optimizes the simultaneous testing for TB and SARS-CoV-2 as sputum is preferred for TB diagnosis [9].

Thirdly, the improvement of methods for the differentiation of MTBC and NTM has allowed new developments in TB/mycobacteriosis diagnosis to be implemented, even during the pandemic.

The implementation of our updated algorithm enabled a full cycle for TB/mycobacteriosis detection to be performed despite the increased workload caused by the COVID-19 pandemic. The proposed procedure of admitting patients to an observation ward in a hospital allows uninterrupted hospitalization of TB patients and the prevention of nosocomial SARS-CoV-2 infection.

Conclusion

The experience gained by CTRI during the COVID-19 pandemic provides a solution to the urgent problem of maintaining effective TB diagnoses alongside the control of the spread of coronavirus disease. We adapted the diagnostic algorithm used to allow the detection of MTBC/NTM DNA and COVID-19 RNA in the same diagnostic sample. This approach allows diagnoses to be optimized, improves testing effectiveness and should be routinely performed by TB institutions.

The implementation of robotic stations and the development of original control software allowed the pre-analytical stage of molecular genetic tests to be automated, improving the sensitivity of molecular genetic tests, excluding contamination during the DNA extraction process, decreasing labour costs and allowing an increased number of tests to be performed.

This rational distribution of time and resources allowed us to perform more than 14 000 PCR tests for MTBC/NTM and SARS-CoV-2 in 2020, preventing the spread of SARS-CoV-2 infection among employees and patients and enabling the

numbers of hospital admissions to be maintained.

Our approach is feasible for any microbiology laboratory involved in TB control as these laboratories are already equipped with automated nucleic acid extraction systems and amplifiers with optical modules for real-time PCR.

The wider implementation of our approach will lead to improved effectiveness and efficiency of diagnosis of mycobacterial diseases in the context of the COVID-19 pandemic.

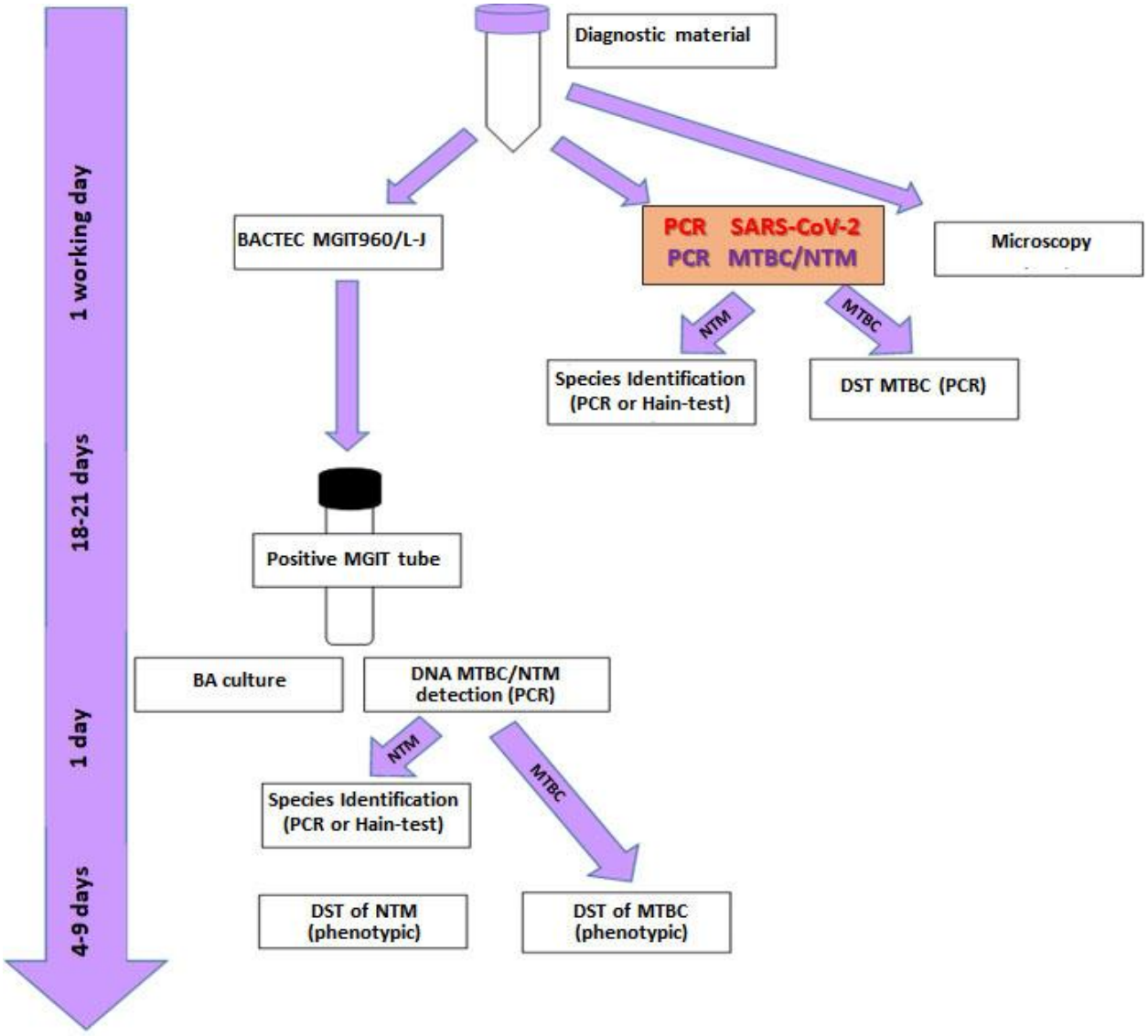


Fig. 1 Diagnostic algorithm for detecting tuberculosis, mycobacteriosis and COVID-19 in the Microbiology Department of the Central TB Research Institute, Moscow

WHO EURO Virtual Library on Good Practices

Call for submission of good practices on response to TB, HIV and viral Hepatitis during the COVID-19 pandemic.

RUSSIAN FEDERATION

Список литературы

1. Chernousova LN, Sevastyanova EV, Larionova EEv, Smirnova TG, Andreevskaya SN, Burakova MV et. al. Use of rapid molecular tests to increase the efficacy of M/XDR-TB treatment. In: Compendium of good practices in the implementation of the Tuberculosis Action Plan for the WHO European Region 2016–2020. Copenhagen, Denmark: WHO Regional Office for Europe; 2019. p.30-35.
2. Эргешов А.Э., Черноусова Л.Н., Андреевская С.Н. Новые технологии диагностики лекарственно-устойчивого туберкулеза. Вестник Российской академии медицинских наук. 2019; 74(6):413-422.
3. Черноусова Л.Н., Ларионова Е.Е., Смирнова Т.Г., Андреевская С.Н., Андриевская И.Ю., Эргешов А. Фенотипическая чувствительность к противотуберкулезным препаратам штаммов *M.tuberculosis* с мутациями, ассоциированными с устойчивостью к рифампицину и изониазиду. Вестник ЦНИИТ. 2017; (1): 10–18.
4. Черноусова Л.Н., Севастьянова Э.В., Ларионова Е.Е., Смирнова Т.Г., Андриевская С.Н., Попов С.А. и др. Федеральные клинические рекомендации по организации и проведению микробиологической и молекулярно-генетической диагностики туберкулеза. М., 2014.
5. Приказ Минздрава РФ от 29.12.2014 № 951 "Об утверждении методических рекомендаций по совершенствованию диагностики и лечения туберкулеза органов дыхания" - М., 2014. - 44 с.
6. Устинова В.В., Смирнова Т.Г., Варламов Д.А., Андриевская И.Ю., Ларионова Е.Е., Черноусова Л.Н. Выявление и дифференциация нетуберкулезных микобактерий и микобактерий туберкулезного комплекса методом ПЦР в режиме реального времени. Туберкулез и болезни легких. 2016;94(9):80-87.
7. Ustinova VV, Smirnova TG, Sochivko DG, Varlamov DA, Larionova EE, Andreevskaya SN, Andrievskaya IY, Kiseleva EA, Chernousova LN, Ergeshov A. New assay to diagnose and differentiate between *Mycobacterium tuberculosis* complex and nontuberculous mycobacteria. Tuberculosis (Edinb). 2019; 114: 17-23.
8. Smirnova T, Ustinova V, Andreevskaya S, Larionova E, Kiseleva E, Chernousova L, Varlamov D, Sochivko D, Ergeshov A. Evaluation of a new assay for nontuberculous mycobacteria species identification in diagnostic material and cultures. Tuberculosis (Edinb). 2021;130:102124.
9. Всемирная организация здравоохранения. Европейское региональное бюро. Рекомендации в отношении стратегии лабораторного тестирования на COVID-19: временное руководство от 21 марта 2020 г.; 2020 (https://apps.who.int/iris/handle/10665/331732, дата обращения 15.02.2021).
10. Mohammadi A, Esmaeilzadeha E., Li Y., Boschb R.J., Li J,Z. SARS-CoV-2 detection in different respiratory sites: A systematic review and meta-analysis. EBioMedicine. 2020; 59: 102903.

WHO EURO Virtual Library on Good Practices

Call for submission of good practices on response to TB, HIV and viral Hepatitis during the COVID-19 pandemic.

RUSSIAN FEDERATION

References

1. Chernousova LN, Sevastyanova EV, Larionova EEV, Smirnova TG, Andreevskaya SN, Burakova MV et al. Use of rapid molecular tests to increase the efficacy of M/XDR-TB treatment. In: Compendium of good practices in the implementation of the Tuberculosis Action Plan for the WHO European Region 2016–2020. Copenhagen: WHO Regional Office for Europe; 2019.
2. Ergeshov AE, Chernousova LN, Andreevskaya SN. New technologies for the diagnosis of drug-resistant tuberculosis. Annals of the Russian academy of medical sciences. 2019; 74(6): 413–22. [Russian].
3. Chernousova LN, Larionova EE, Smirnova TG, Andreevskaya SN, Andrievskaya IYU, Ergeshov A. Phenotypic susceptibility to anti-TB drugs in *M.tuberculosis* strains carrying mutations involved RIF and INH resistance. CTRI Bulletin. 2017;(1):10–18. [Russian].
4. Chernousova LN, Sevast'yanova EV, Larionova EE, Smirnova TG, Andreevskaya SN, Popov SA et al. Federal'nyye klinicheskiye rekomendatsii po organizatsii i provedeniiu mikrobiologicheskoi i molekuliarno-geneticheskoi diagnostiki tuberkuleza. Moscow; 2014. [Russian].
5. Order of the Ministry of Health of the Russian Federation of 9 December 2014 "Ob utverzhdenii metodicheskikh rekomendatsiy po sovershenstvovaniyu diagnostiki i lecheniya tuberkuleza organov dykhaniya". Moscow; 2014. [Russian].
6. Ustinova VV, Smirnova TG, Varlamov DA, Andrievskaya IYu, Larionova EE, Chernousova LN. Detection and differentiation of non-tuberculous *Mycobacteria* and *M.tuberculosis* complex by real time PCR. Tuber Lung Dis. 2016;94(9):80–7. [Russian].
7. Ustinova VV, Smirnova TG, Sochivko DG, Varlamov DA, Larionova EE, Andreevskaya SN et al. New assay to diagnose and differentiate between *Mycobacterium tuberculosis* complex and nontuberculous mycobacteria. Tuberculosis (Edinb). 2019;114:17–23.
8. WHO. Laboratory testing strategy recommendations for COVID-19: interim guidance, 21 March 2020. World Health Organization (https://apps.who.int/iris/handle/10665/331509, accessed 15 February 2021).
9. Mohammadi A, Esmaeilzadeha E, Li Y, Boschb RJ, Li JZ. SARS-CoV-2 detection in different respiratory sites: A systematic review and meta-analysis. EBioMedicine. 2020;59:102903.

WHO EURO Virtual Library on Good Practices
Call for submission of good practices on response to TB, HIV and viral Hepatitis during the COVID-19 pandemic.

GEORGIA

Adapting HIV self-testing platforms for the distribution of HIV prevention commodities during COVID-19-related mobility restrictions

Ketevan Stvilia, MD MHA, Manager of the Global Fund HIV Program, National Center for Disease Control and Public Health (NCDC), Georgia
National Center for Disease Control and Public Health (NCDC)

A brief description of the article

In Georgia the rapid spread of the COVID-19 epidemic resulted in population mobility restrictions, such as lockdowns and quarantines, that limited access to HIV prevention, testing and treatment services. The online HIV self-testing platform www.selftest.ge was launched in February 2020 via the Global Fund HIV Program. The platform helped the country sustain HIV testing in the men who have sex with men (MSM) population. A local courier service was used to deliver the HIV self-test kits that were ordered online. A social media advertisement for the online HIV self-testing platform increased the numbers of MSM who ordered the kits. This successful intervention helped the country fill the HIV counselling and testing gaps created due to the COVID-19 epidemic and was later expanded to other key and vulnerable populations, such as people who inject drugs and female sex workers.

Keywords

HIV infection, Self-testing, HCT, HIV prevention, Community-based services, MSM

Authors

Lela Serebryakova, PhDc MSa, Monitoring and Evaluation Officer of the Global Fund HIV Program, National Center for Disease Control and Public Health (NCDC), Georgia

Shota Pevadze PhD, Manager of the Global Fund HIV Program project "HIV prevention among MSM"

Irma Khonelidze, MD MS, Director of the Global Fund Programs, Deputy Director General, National Center for Disease Control and Public Health, (NCDC) Georgia

David Kakhaberi, PhD, Director, LGBTQI CBO "Equality Movement"

GEORGIA

Corresponding Author: Ketevan Stvilia, MD MHA, Manager of the Global Fund HIV Program, National Center for Disease Control and Public Health (NCDC), Georgia; email: stviliak@gmail.com; Phone: +995 599564437

Abstract

In Georgia, the rapid spread of COVID-19 epidemic resulted in population mobility restrictions, such as lockdowns and quarantines, that limited access to HIV prevention, testing and treatment services. The launch of an online HIV self-testing platform (www.selftest.ge) in February 2020, via the Global Fund HIV Program, has helped the country sustain HIV testing in the population of men who have sex with men (MSM). The community-based organization (CBO) Equality Movement is responsible for the platform's operation and reached an agreement with the local courier service to deliver the HIV self-tests (HIVSTs) to clients' homes. HIVST delivery started in March 2020 in Tbilisi, the capital city. A total of 818 MSM and transgender people registered on the platform and received at least one delivery package during March–December 2020. From these HIVSTs ordered, 11 (1.3%) positive test results were reported. All individuals with positive test results were referred to the National AIDS Center for follow-up confirmatory testing. The HIV self-testing platform's services were expanded to include delivery of HIV commodities and the platform has the potential to cover other key population groups and provide self-testing for other infections.

Background

In Georgia the sharp increase in HIV prevalence in men who have sex with men (MSM) is a serious public health concern. The most recent Integrated Biological and Behavioral Surveillance conducted in MSM showed that HIV prevalence has increased from 7% in 2010 to 21.5% in 2018 in Tbilisi [1]. Based on the size estimation study conducted in 2018, there are approximately 18 500 MSM in Georgia, which is 1.55% of the adult (15–64 years) male population [2].

Georgia is well positioned to achieving the second and the third pillars of the UNAIDS 90-90-90 Fast-Track targets. Specifically, for the 2nd pillar, which is the enrolment of people living with HIV (PLHIV) on to antiretroviral therapy (ART), 89% of registered PLHIV eligible for ART are enrolled on the treatment, and for the 3rd pillar, viral suppression in ART patients, Georgia has achieved a viral suppression rate of 84%. However, the country is behind on the HIV detection target; in 2019, only 59% of the estimated 9 400 PLHV were aware of their HIV-positive status [3]. Various innovative HIV testing strategies are being piloted in Georgia, such as primary care-based integrated HIV testing, peer-assisted testing and HIV self-testing, to increase detection rates.

An HIV self-test (HIVST) is an HIV testing process in which an individual collects their own specimen (oral fluid or blood), performs a test, often in a private setting, and interprets the result, either alone or with someone they trust. A

reactive (HIV-positive) HIVST result requires further testing and validation/confirmation [4].

HIVSTs have proved to be highly acceptable among various user groups in diverse settings, particularly in key populations. They were first introduced in Georgia in 2020 as part of the Global Fund HIV Program for testing MSM and transgender people. The service was offered by the local community-based organization (CBO) Equality Movement, which provides HIV prevention services to LGBTQI (lesbian, gay, bisexual, trans, queer, intersex) communities in Georgia. Equality Movement created an online platform where registered users could anonymously order deliveries of test and HIV prevention commodities, and access information on how to perform tests, HIV prevention, and how to proceed if a test produced a positive result. This information is provided using various digital media, and through online chat-based with peer consultants.

Method & materials

The CBO Equality Movement launched a website (www.selftest.ge) in February 2020 and this platform was actively promoted in the MSM community in Georgia through Equality Movement's website, online community forums and peer workers.

Individuals are required to register on the website to access the services. The registration process requires clients to provide an active cell phone number and to fill out a survey. The phone number is used by the courier service to organize product delivery; the survey is used to generate an identification code used for HIV surveillance and reporting in the country and to input the case in the National HIV Program database. The code does not allow individuals to be identified and, therefore, clients have the option of remaining anonymous.

Once registered, the client can order an HIVST kit, chat with a peer consultant and access a variety of HIV-related material. Clients who have ordered tests are asked to provide feedback on the test results; HIVSTs can be ordered once every 3 months. Clients have access to peer consultants via the online chat facility on Equality Movement's website to access additional information or any support needed. If required, (online) appointments are available with psychologists for additional support (e.g. in cases of positive test results). Equality Movement's website also hosts a video with instructions on how to use HIVSTs to help minimize errors related to testing procedures or result interpretation.

Equality Movement reached an agreement with thae local courier service to deliver HIVST orders. In Georgia, the local courier service used is one of the most popular platforms for deliveries of food, groceries, household and other items, and so was able to deliver HIVSTs without attracting attention. The delivery model is different from local courier service's usual operations as Equality Movement is not a registered seller (or restaurant) and the client does not use the courier's app to place the order. All the extra work required to organize deliveries was covered within local courier service's corporate social responsibility portfolio, and the Equality

Movement covered transportation fees from the Global Fund supported project. HIVST deliveries started in March 2020.

A dedicated Equality Movement staff member has contact with HIVST clients twice in the process; firstly, to organize the delivery and, secondly, to obtain the test result if the client does not report it on the platform, and/or to provide guidance on follow-up testing in cases of positive results. The platform ensures automatic data collection for reporting.

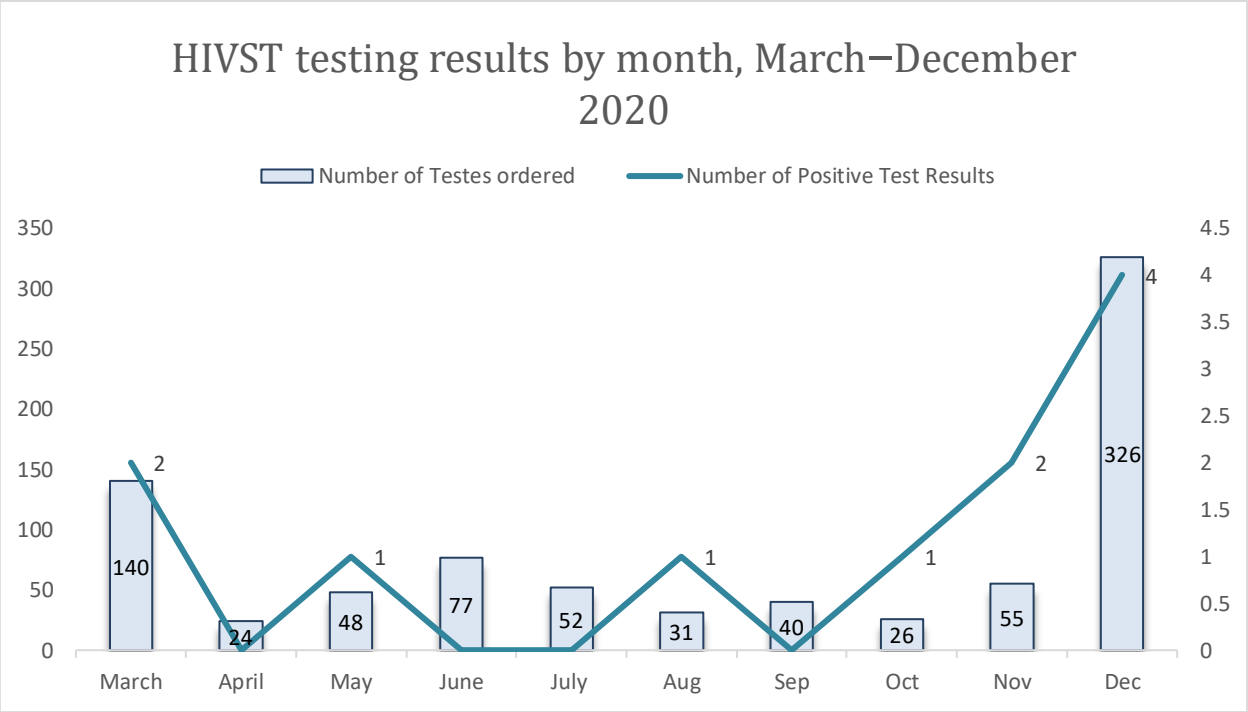
The website launch coincided with the COVID-19 epidemic and a lockdown, which restricted public movement in the city. The project implementation unit of the Global Fund Program at the National Center for Disease Control and Public Health of Georgia, in negotiation with the Equality Movement leadership, agreed to expand platform operations to deliver HIV prevention commodities, such as lubricants and condoms, information materials and facemasks. The package developed included one HIVST; the self-test instruction leaflet; 15 condoms; thirty 2 ml sachets or two 20 ml tubes of lubricant; information materials; promo stickers and single-use surgical masks.

Results

A total of 819 users were registered on the platform and received at least one delivery package during March to December 2020. From these HIVSTs ordered, 11 (1.3%) positive test results were reported. All these individuals were referred to the National AIDS Center for follow-up diagnostics and were offered peer support. Figure 1 summarizes the number of tests ordered and the number of positive test results each month.

Figure 1 HIVST ordering information and positive test results obtained

GEORGIA

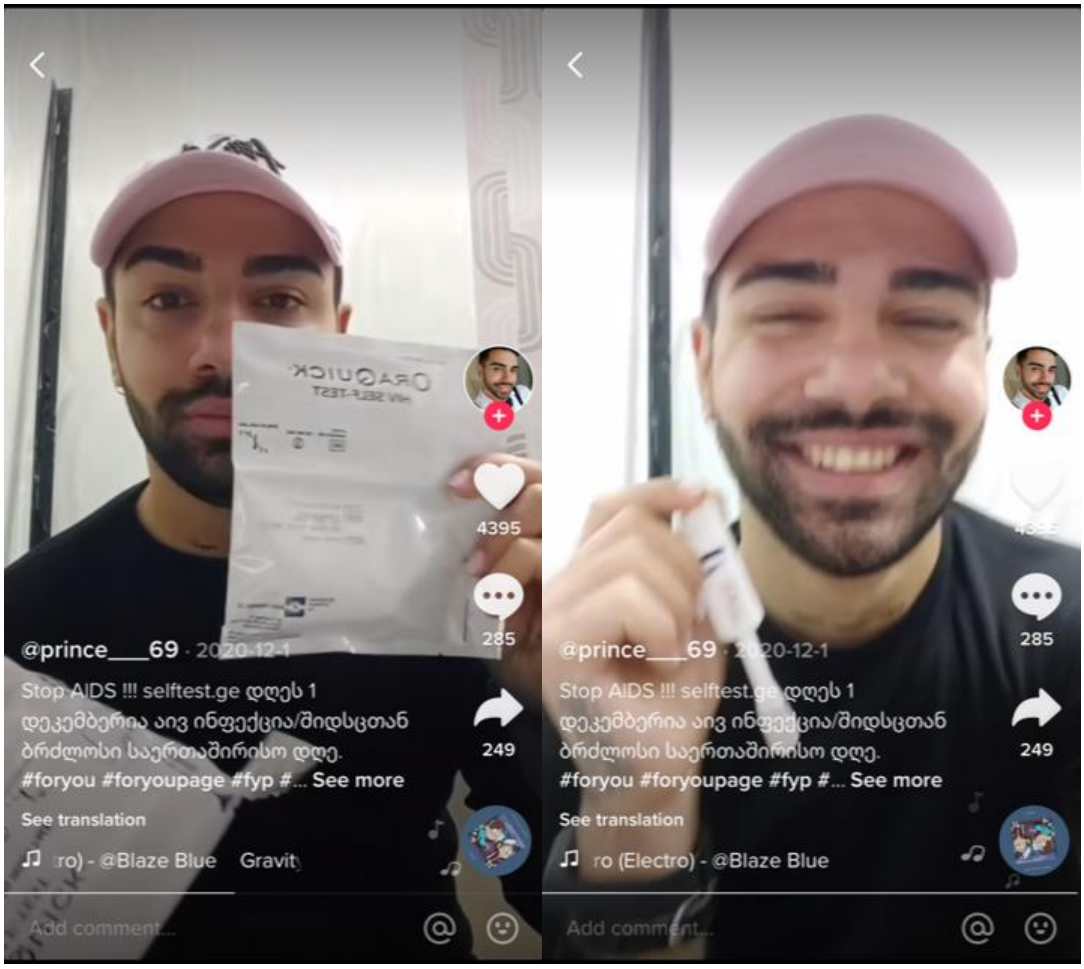


The number of platform users who ordered HIVSTs varied considerably each month. Initially, during March a large number of clients (140) ordered tests and two of them (1.4%) reported positive results. During the following months, the number of orders decreased. The pattern of orders aligned with the tightening of COVID-19-related restrictive measures, and, possibly decreased risk of sexual behaviour and exposure to HIV infection due to the lockdown. The decreased number of orders in August may be relate to the summer vacation season when a lot of MSM living in Tbilisi locate to the seaside.

Equality Movement promoted the platform using a series of social media videos. For example, on 1 December, at World AIDS Day, a few socially active LGBTQI activists recorded and published videos (Figure 2). The videos had 93 000 views and 326 kits were ordered in December, which is the highest recorded number of orders for Georgia and accounted for 40% of total orders during the platform's 10-month operation period, and the largest total number of positive test results (four cases) were also reported in December.

The platform also distributed more than 12 000 condoms and more than 24 000 sachets/tubes of lubricant to the MSM community during the period when outreach workers could not provide these commodities because of COVID-19-related restrictions on public movement.

Figure 2 Screenshots from the self-test platform social media promotion video, 1 December 2020



Discussion

HIVST implementation in Georgia supports international evidence that HIVST increases testing uptake in hard-to-reach populations, and particularly among people who are undiagnosed or who are at high ongoing risk and need frequent retesting but do not want to visit health care facilities or community service centres due to stigma and fear of discrimination.

Coincidently, the HIVST platform played an important role in ensuring access to HIV testing and HIV prevention commodities for the MSM population in Tbilisi during the COVID-19 epidemic. For a few months, the platform was was the only mean distributing tests and commodities to MSM in Tbilisi. Later on, the service proved to be a good mechanism for reaching out to communities in other major cities.

The initial model of HIVST distribution developed by Equality Movement, the local CBO, was based on a delivery company's services, but later on Equality Movement, along with other CBOs, developed other models for HIVST delivery such as peer delivery and distribution through vending machines.

The model has a strong potential for distributing self-tests for other infections, such as hepatitis, among KVPs. Providing different options for the test delivery and for online/telephone support while users are performing tests or reading results, and for linkage to care, is important to provide a model that suits everyone who is in need of HIV testing.

Conclusion

The piloting of HIVST through an online platform has proven to be highly acceptable among MSM in Tbilisi, Georgia. The platform has the potential to expand HIVST services to other key and vulnerable populations, such as people who inject drugs, female sex workers, transgender people, and to HIV sero-discordant couples, and youth groups in general. As courier services become available in other large cities, the HIVST platform has increased the geographical coverage of the HIVST intervention.

As platform registration does not requires people to provide personal identification information or to visit for health care centres or community organization facilities, the HIVST delivery model introduced supports the reduction in stigmatization of this KVP and assures anonymous testing for those in need of these services.

HIVST supports people to increase their knowledge of their own, and their partner's, HIV status, which is critical to the success of the country's HIV response with its overarching goals of providing HIV testing services to key populations and detecting infections at the earliest stage to facilitate timely access to and uptake of HIV prevention, ART treatment and care services in Georgia.

The model is highly applicable in the context of the COVID-19 epidemic or any other public health threat that requires population mobility restriction as a control measure.

References

1. IBBS of MSM in Georgia, National Center for Disease Control and Public Health, Curation International Foundation, NGO Tanadgoma, Tbilisi, 2018.
2. Population Size Estimation of Men Who Have Sex with Men in Georgia, National Center for Disease Control and Public Health, Curation International Foundation, NGO Tanadgoma, Tbilisi, 2018.
3. UNAIDS. GAM Country Report for Georgia.
4. Guidelines on HIV self-testing and partner notification, Supplement to consolidated guidelines on HIV testing services, WHO, December, 2016; https://apps.who.int/iris/bitstream/handle/10665/251655/9789241549868-eng.pdf;jsessionid=A42FACCB00306E198B308F2FAB76F2AC?sequence=1

It's Time to Talk about Tuberculosis!

Turekhanov Yagdar, Adenov Malik, Eralieva Lyazzat, Pushkina Tatyana, Kulsharova Maya, Dudnik Roman, Ainura Batyrbekova.

Public Foundation "AFEW Kazakhstan", USAID Eliminating TB in Central Asia Project, National Research Center of Phthisiopulmonology of the Republic of Kazakhstan, Abt Associates Inc., USAID Eliminating TB in Central Asia Project.

Abstract

In March 2020, the Government of Kazakhstan declared a state of emergency because of the COVID-19 pandemic, causing many organizations and businesses to suspend their operations. in honour of World Tuberculosis (TB) Day, USAID's Eliminating TB in Central Asia Activity and the National Research Centre for Phthisiopulmonology (NRCP), Republic of Kazakhstan, conducted a successful media campaign to reduce TB-related stigma in Kazakhstan despite the COVID-19 restrictions.

The USAID project and the NRCP produced six video stories featuring first-hand accounts of life with TB, the importance of understanding aspects of the disease, TB diagnosis and treatment, how to support people with TB, and stigma and discrimination issues. The video stories from people who had bee affected by TB were broadcast on social networks, and on the Facebook and Instagram pages of the AFEW Kazakhstan nongovernmental organization for a month. The videos received considerable public attention, collecting more than half a million views, positive comments and reposts, and they attracted significant interest from audiences from different segments of the population. Under pandemic conditions, an event held remotely – using an online format (via Facebook and Instagram) – is able to achieve large-scale population coverage.

Background

In Kazakhstan, the COVID-19-related state of emergency, introduced on 15 March 2020, brought the work of many organizations to a standstill. Global attention focused on the novel coronavirus, overshadowing other equally urgent issues, including TB, which claims up to 2 million lives annually. The USAID Eliminating TB in Central Asia Activity restructured some of its activities as remote/online learning events and launched a social media campaign in honour of World TB Day to remind people that TB is a major global health concern.

Previously, media campaigns had been conducted using traditional mass media – television, print publications, billboards – which have now lost much of their relevance. Today, the Internet, especially social media, plays a leading role in getting information out to the public. The earlier period was characterized by an information deficit. Social networks took hold during a time of information deficit, immediately becoming a main source of information. This set the stage for successful PR campaigns. The Internet was not yet overloaded with information, but offline communication was no longer sufficient and people found they lacked information. The USAID Activity demonstrated that it is possible to organize and carry

out a campaign reaching more than half a million people, at little cost, through social media. Social media made it possible to share content with people and provided an opportunity for feedback, reposts and discussions with friends— which helped maximize campaigns' reach.

The goal of the 2022 World TB campaign was to attract public attention to TB issues, especially to the stigma faced by people with TB. Even in the twenty-first century, many people still consider TB to be something to be ashamed of. Community members are often fearful of people with TB, and this stigma is a major contributor to people's reluctance to get tested or treated for TB.

Given the pandemic conditions in the country, the Activity examined what it could do to improve the population's understanding that anyone can get TB and that TB can be cured. The people who are best positioned to convey these messages are people who have had TB and who have recovered. These personal accounts provide narratives of ordinary people overcoming TB: receiving a timely TB diagnoses, seeing their treatment through toi the end without interruption, and being completely cured. TB survivors can describe how they now lead active and healthy lifestyles and experience joy and happiness, while surrounded by their loved ones.

To enable these messages to be heard, the Activity launched a contest for people affected by TB, asking them to produce short videos featuring their stories in return for small cash prizes. These videos would provide the Activity for material to use in public service announcements aimed at reducing TB-related stigma and discrimination, which could be put together without the requirement for, and cost of, film crews and actors. The criteria for the people submitting the videos was that they should have been affected by TB, and they were asked to tell the story of how they overcame the disease and to outline who helped them in their journey.

Smart phones allow everyone to produce videos, and to take on the roles of producer, scriptwriter, camera operator and lead actor themselves. The resulting videos are powerful, because they capture real-life situations and emotions. Small cash prizes were awarded to contest winners, but the main motivation for the competitors was having the opportunity tell their own stories and make statements about themselves, and the problem of TB, to the whole country.

Methods and materials

The event was organized as a competition for video stories of people who have recovered from TB. The best videos were selected from the entrants and shared online. Six videos meeting the contest criteria were selected and published on the Facebook and Instagram pages of AFEW Kazakhstan (a nongovernmental organization).

The winning video stories can be viewed at the following links:

Alexander:
https://web.facebook.com/AFEW.KZ/videos/1091905454486276/

Danat:
https://web.facebook.com/AFEW.KZ/videos/1042208669484861/

Symbat
https://web.facebook.com/AFEW.KZ/videos/662976714275485/ (Russian version)

https://web.facebook.com/AFEW.KZ/videos/498931984107904/ (Kazakh version)

Kristina:
https://web.facebook.com/AFEW.KZ/videos/509726002935418/

Almat:
https://web.facebook.com/AFEW.KZ/videos/648293472625174/

Venara:
https://web.facebook.com/AFEW.KZ/videos/218653722709140/

A success story on the implementation of TB control measures under the Activity in the context of COVID-19 was posted on the USAID website, the USAID Facebook page, and on the website and Instagram of AFEW Kazakhstan:

USAID website:
https://www.usaid.gov/kazakhstan/program-updates

USAID Central Asia Facebook page:
https://www.facebook.com/USAIDCentralAsia/posts/3428629603864105

AFEW Kazakhstan website:
http://www.afew.kz/ru/a/news/prishlo-vremya-govorit-o-tuberkuleze

AFEW Kazakhstan Facebook page:
https://www.facebook.com/afewkazakhstan/?ref=br_tf&epa=search_box

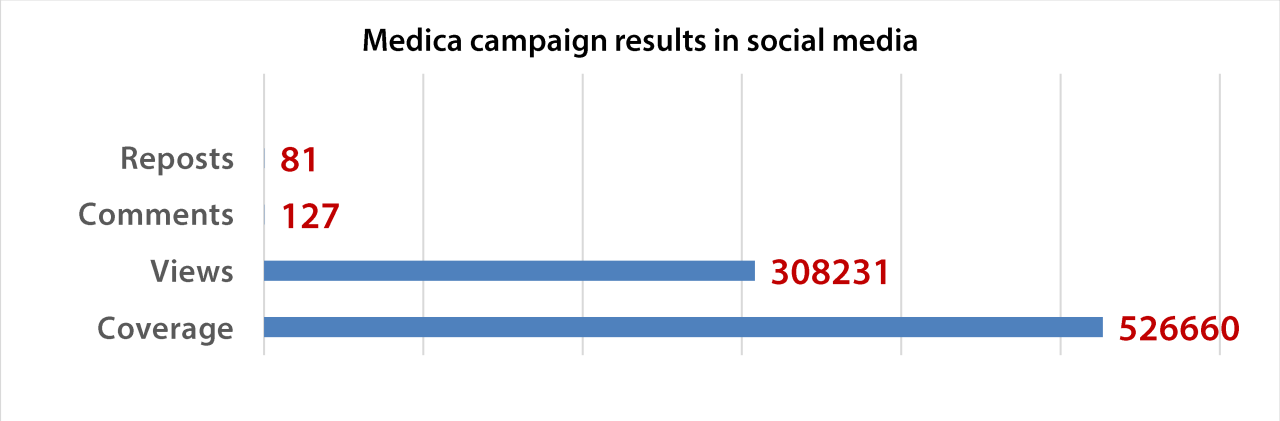
AFEW Kazakhstan instagram page:
https://www.instagram.com/p/CAmXn-bpDHA/?utm_source=ig_web_copy_link

Results

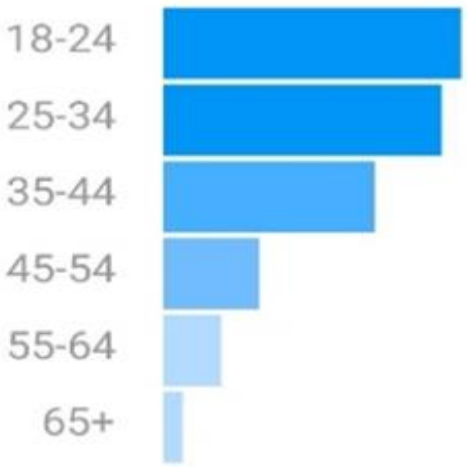
In a few weeks, between 10–30 March 2020, about 600 000 men (55%) and women (45%), the majority aged 18–44, from all regions of Kazakhstan, watched the video stories made by people who had survived TB. Viewers posted the videos on their pages, reposted and left positive comments and words of support for the presenters. Everyone who saw the videos was touched in some way – people thought about their health and their attitude towards people affected by TB. By re-examining their own stereotypes, people become kinder and showed concern for their loved ones and others. Through this intervention, the Activity contributed to reducing stigma and discrimination against people affected by TB, and helped popularize the use of "online broadcasting" to raise awareness of social issues through remote communication.

Through this campaign, the USAID Activity was able to raise awareness of the stigma associated with TB in Kazakhstani society and to demonstrate that a large-scale media campaign can be conducted even during a pandemic. To prevent disrupting the gains that had been in reducing the spread of TB, it is extremely important that these efforts are continued at the current COVID-19 prevalence levels. In addition to organizing the campaign, it is important to engage stakeholders and decision-makers to ensure further dissemination of information on TB.

Figure 1 Medica campaign results in social media



Age range of followers of the campaign on social networks



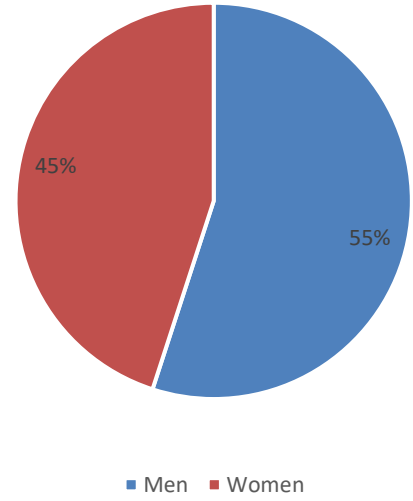
Age range

The Activity monitored the age of people who were very active in commenting on video stories, making reposts. The most active participants were people aged 18 to 44 who lead active lifestyles.

Gender disagregation of followers of the campaign on social networks

Gender

Мониторинг медийной кампании показал, что подписчики кампании в социальных сетях включали 55% мужчин и 45% женщин.



Discussion

Under quarantine conditions, most people's incomes decreased and the cash prizes received by the finalists of the competition were useful in providing much needed support at this difficult time. The USAID Eliminating TB in Central Asia Activity demonstrated how to organize a large-scale media campaign as efficiently and cost effectively as possible, even under quarantine conditions.

"This competition gave me an incentive to keep blogging on Instagram @dnevnik_tbc. I believed in myself, in my abilities and became confident that people with TB are the same as others. We should not be silent about our experience, people should know about this disease," commented Kristina, one of the contest finalists.

Today, one of the basic human needs – communication – is almost completely satisfied by the Internet, evidenced by the ever-growing popularity of social networks. Social networks cover mixed demographics, including the younger and older generations, and various social groups and classes, meaning that using social networks is a powerful method of interacting with the population. The USAID Eliminating TB in Central Asia Activity used this opportunity to engage with society. Using such a powerful Internet resource, the Activity was able to publish the video stories, interact with the audience, and study public opinion, perspectives and attitudes towards TB. The Activity will be able to use the information gathered from audience to develop further interventions aimed at changing public opinion on TB.

Conclusion

In the context of the COVID-19 pandemic, the Activity found a way to work remotely and disseminate information online using the Instagram and Facebook social networks and contributed to the fight against TB.

This contribution to World TB Day achieved large-scale coverage. It provided evidence that this approach to working online is acceptable and applicable in practice, especially when it is necessary to convey information to a public audience quickly and efficiently.

We expect that the stories told by people affected by TB, which generated an outpouring of empathy and touched everyone who saw them, will further contribute to reducing stigma in the community and increasing tolerance towards people with TB, especially among those who provide TB services. In the long term, such campaigns and communication strategies that contribute to the subsequent reduction of TB-related stigma and discrimination have the potential to foster the development of a segment of society that looks out for the interests of people affected by TB. For example, community leaders might step up as strategic communication activists to communicate TB information and mainstream information on TB, contribute to reducing stigma, and strengthening social mobilization and the involvement of society and decision-makers. These campaigns can be the starting point for the revision of policies on information strategies and the reorientation of the way materials are presented. This can include reviewing effective channels and communication mechanisms in the health system which can contribute to the formation of a new view of TB without fear and stigma.