The fight against sexually transmitted infections cannot stop in the COVID-19 era: a brazilian experience in online training for sexually transmitted infections guidelines

A luta contra as infecções sexualmente transmissíveis não pode parar na era COVID-19: experiência brasileira em treinamento on-line para diretrizes em infecções sexualmente transmissíveis

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ABSTRACT

Introduction: The Brazilian Ministry of Health had planned face-to-face workshops for professional training about the Clinical Protocols and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections for the year 2020. Due to the COVID-19 pandemic, the workshops were cancelled, and a new strategy was adopted: virtual meetings, called Webinars — Clinical Protocols and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections 2020. **Objective:** To report the experience at the Ministry of Health in online training about the clinical protocol and therapeutic guidelines for comprehensive care for people sexually transmitted infections for health professionals in 2020. **Methods**: The webinars were held in partnership with the Brazilian Society of Sexually Transmitted Diseases and the Pan American Health Organization. Each chapter of the Clinical Protocols and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections — 2020 was converted into a webinar, with the participation of at least three experts, two speakers, and a moderator. **Results**: In total, 16 webinars were presented, covering topics such as sexually transmitted infections surveillance, prevention, diagnosis, treatment, public policies, and sexual violence. The initiative had more than 77,000 hits, with an average of 4,900 hits per webinar and the topic "syphilis" being the most accessed. The event reached all 27 federative units of Brazil, as well as 27 other countries. About 500 questions were received from the audience and answered during the sessions and/or through a document published later on by the Ministry of Health. **Conclusion**: Given the high number of hits and inquiries received, we can conclude that health professionals remained engaged in the topic of sexually transmitted infections during the pandemic. This experience shows the great potential of innovative methods for distance learning to promote continuing education, including a series of webinars aimed at strengthening the fight against sexually transmitted infections.
Keywords: Sexually transmitted infections. Education, continuing. Professional training. Clinical protocols. Education, distance.

RESUMO

Introdução: O Ministério da Saúde do Brasil planejou para o ano de 2020 oficinas presenciais para capacitação profissional sobre o Protocolo Clínico e Diretrizes Terapêuticas para Atenção Integral às Pessoas com Infecções Sexualmente Transmissíveis. Em função da pandemia de COVID-19, as oficinas foram canceladas, optando-se pela estratégia de encontros virtuais, denominados Webinares — Protocolo Clínico e Diretrizes Terapêuticas para Atenção Integral às Pessoas com Infecções Sexualmente Transmissíveis – 2020. **Objetivo:** Descrever a experiência do Ministério da Saúde em capacitações on-line para profissionais de saúde no contexto dos Webinares — Protocolo Clínico e Diretrizes Terapêuticas para Atenção Integral às Pessoas com Infecções Sexualmente Transmissíveis — 2020. **Métodos:** Os webinares foram realizados em parceria com a Sociedade Brasileira de Doenças Sexualmente Transmissíveis e Organização Pan-Americana da Saúde. Cada capítulo do Protocolo Clínico e Diretrizes Terapêuticas para Atenção Integral às Pessoas com Infecções Sexualmente Transmissíveis – 2020 foi convertido em um webinar, com a participação de pelo menos três especialistas, sendo dois palestrantes e um moderador. **Resultados:** No total, foram apresentados 16 webinares, que abordaram temas como vigilância, prevenção, diagnóstico, tratamento das infecções sexualmente transmissíveis, políticas públicas e violência sexual. Foram mais de 77 mil acessos, com média de 4.900 acessos por webinar, sendo a que a sífilis foi a temática mais acessada. O evento alcançou todos as 27 unidades federativas do Brasil, bem como outros 27 países. Cerca de 500 perguntas foram recebidas, as quais foram respondidas durante as sessões e/ou por meio de um documento publicado pelo Ministério da Saúde. **Conclusão:** Dado o elevado número de acessos e questionamentos recebidos, conclui-se que os profissionais da saúde permaneceram engajados no tema infecções sexualmente transmissíveis durante a pandemia. Essa experiência demonstrou o grande potencial de métodos inovadores de ensino à distância para promoção da educação permanente, como a realização de uma série de webinares, visando ao fortalecimento do combate às infecções sexualmente transmissíveis.
Palavras-chave: Infecções sexualmente transmissíveis. Educação permanente. Capacitação profissional. Protocolos clínicos. Educação à distância.

INTRODUCTION

In May 2016, the World Health Assembly adopted the 2016-2021 global health sector strategy on sexually transmitted infections (STIs). This strategy includes scaling up evidence-based interventions and services to control STIs and lessen their impact as a public health problem by 2030. It set targets for reducing the incidence

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of gonorrhea and syphilis in adults and recommended carrying out a survey of global incidence of STIs[1]. More than one million new cases of curable non-viral STIs are estimated to be diagnosed in people aged 15 to 49 years every day, amounting to approximately 374 million cases annually; of these, about 7 million are cases of syphilis (caused by *Treponema pallidum*), 82 million of gonorrhea (caused by *Neisseria gonorrhoeae*), 128 million of *Chlamydia trachomatis* and 156 million of infection by *Trichomonas vaginalis*[2]. Countries classified as "upper-middle income", like Brazil, concentrate more than half of total cases[3].

In Brazil, the number of people with syphilis has increased significantly in recent years — from 33.9 cases of acquired syphilis per 100,000 inhabitants in 2015 to 54.5 cases per 100,000 inhabitants in 2020. Also in 2020, the detection rate of syphilis in pregnant women in Brazil was 21.6/1,000 live births and the incidence rate of congenital syphilis was 7.7/1,000 live births[4]. It is not compulsory to report other STIs such as those caused by *Neisseria gonorrhoeae, Chlamydia trachomatis, Trichomonas vaginalis, Mycoplasma genitalium* and, therefore, there are no national epidemiological data on them to date[5]. However, studies conducted in the country show that the epidemiological situation of other STIs is also worrying and needs attention from the government; as examples, one may cite the prevalence of 1.4% of gonococcus in sexually active people aged 15–49 years[6] and the prevalence of 9,8% of chlamydia in women aged 15–24 years attending prenatal services[7].

To guide managers and professionals in the prevention, diagnosis, monitoring and treatment of STIs, considering the technologies available in the SUS, the Ministry of Health (MS) instituted the Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections (PCDT-IST, acronym in Brazilian Portuguese). This document gathers analyses of scientific evidence available in the literature and efficacy, safety and cost-effectiveness criteria. It was created with the contribution of a group of STI specialists and with the approval by the National Commission for the Incorporation of Technologies to SUS (CONITEC)[8].

The qualification of health care professionals, especially those who work in the setting of primary health care (PHC), is a key factor in dealing with STIs, and it is the constitutional responsibility of SUS to act in their training. In the same sense, the National Policy for Permanent Education in Health (PNEPS, acronym in Brazilian Portuguese), established in 2004, proposes the development of initiatives for the education of health professionals to meet the needs of the SUS and to assist in the handling of daily problems of health services[9].

As a professional qualification strategy, the General Coordination for Surveillance of Sexually Transmitted Infections (CGIST) — of the Department of Diseases of Chronic Conditions and Sexually Transmitted Infections (DCCI), Secretariat for Health Surveillance (SVS), Ministry of Health —, in partnership with the states coordinations of surveillance of STI/human immunodeficiency virus (HIV)/viral hepatitis, planned training workshops on the management of STIs in primary health care for professionals to take place in 2020. Their aim was to disseminate updates in comprehensive care for people with STIs, based on PCDT-IST recommendations. However, due to the COVID-19 pandemic, face-to-face workshops had to be postponed indefinitely.

Given the need to maintain qualifying and updating activities for professionals, encouraged by recommendations by the Ministry of Health in the management of STIs, the virtual meetings called PCDT-IST 2020 Webinars were created.

OBJECTIVE

To report the experience at the Brazilian Ministry of Health in online training sessions on sexually transmitted infections guidelines for health professionals.

METHODS

From March to August 2020, 16 webinars were broadcasted in joint collaboration between the Ministry of Health, the Brazilian Society of Sexually Transmitted Diseases (SBDST) and the Pan American Health Organization (PAHO), covering the main PCDT-IST themes and chapters (**Figure 1**). Each webinar brought at least two experts in each theme and a moderator. The webinars were presented live in slide format, lasting approximately 20 minutes each. At the end, a moment was reserved for the experts to answer questions.

The online seminars took place in the Webex platform, with simultaneous transmission through the Brazilian Government's Media Center (mediacenter.aids.gov.br). Only organizers, speakers, and moderators could access the Webex virtual room. The AIDS Media Center is a free access and live streaming hotsite of the DCCI/SVS/Ministry of Health. The videos were recorded and made available on YouTube (**Table 1**) and through distance education courses (EAD) on the AVASUS platform (Virtual Learning Environment of the Unified Health System), at the Federal University of Rio Grande do Norte (UFRN) (avasus.ufrn.br).

The initiative required participants to fill in a registration form available for each webinar. Being registered was not mandatory for one to attend the event, but one could only send questions and get a declaration of participation in each webinar if registered.

Questions received during webinars were answered online and subjected to time availability. In addition, the Ministry of Health prepared a publication with questions and answers with the help of speakers. Questions were categorized based on a definition of criteria for subdivision presented in **Table 2**. Each question was grouped under one category, which was selected by two independent professionals. When there was divergence in the classification, a third professional helped in the final decision. Responses to questionnaires in the form of comments, not questions, were excluded from the total number of questions.

After each webinar, an evaluation questionnaire was sent via PAHO to registered participants to identify their profile and to survey their opinion about the event.

RESULTS

The PCDT-IST 2020 webinars had great national and international repercussion. The themes covered several issues related to STIs that are of special interest to health professionals and managers, including epidemiological surveillance of STIs, management of specific diseases, use of laboratory resources for STIs, sexual violence and STIs, and public policies for STIs.

Thirty-six professionals working with STIs participated as speakers, including several researchers, professors and professionals linked to universities, health services, health municipal and state departments, and the Ministry of Health.

The results on synchronous access on MediaCenter and asynchronous access in other platforms showed wide participation in the webinars, as described in **Table 3**, which depicts the distribution of accesses according to the topic addressed.

All PCDT-IST 2020 webinars gathered 77,703 hits, which determines the possibility of expanding training in virtual format for health professionals on STIs and other important topics in public health.

Overall, each session had on average 4,900 hits. The subject matter with the largest number of hits was acquired syphilis, with 7,651 hits, while the subject with the smallest number of hits was Zika virus infection, with 1,403 hits. Four webinars were dedicated to syphilis, with themes divided into epidemiological surveillance,

Source: Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Figure 1 – Methodology for broadcasting webinars on Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections – 2020.

Table 1 – Access to webinars on Clinical Protocols and Therapeutic Guidelines for Comprehensive Care for Sexually Transmitted Infections – 2020.

Theme	Link
Theme 1. Epidemiological surveillance of sexually transmitted infections – syphilis	https://youtu.be/s9pHTiKGgvo
Theme 2. Acquired syphilis	https://youtu.be/qfpc9Z9VO0E
Theme 3. Vertical transmission of syphilis	https://youtu.be/B1ZmvfkbklU
Extra Session: syphilis diagnosis tests	https://youtu.be/ryottcivySw
Theme 4. Infections that cause vaginal discharge	https://youtu.be/xDoDM_Vz1SU
Theme 5. Infections that cause cervicitis	https://youtu.be/qDDaAvQV0Ug
Theme 6. Infections that cause urethral discharge	https://youtu.be/2Jn3YGd8wYQ
Theme 7. Infections that cause genital ulcers	https://youtu.be/IGIZcKvEtZo
Theme 8. Pelvic inflammatory disease	https://youtu.be/Lnekqmm4KTI
Theme 9. Human papillomavirus (HPV) infection	https://youtu.be/sDgSRQfRCHk
Theme 10. Laboratory diagnosis in sexually transmitted infections	https://youtu.be/Qn7_mqHVC8w
Theme 11. Zika virus infection	https://youtu.be/ZG7p2lLErdU
Theme 12. Human T-cell lymphotropic virus (HTLV) infection	https://youtu.be/EmyAgp9ibKU
Theme 13. Approach to STIs centered on the sexually active person	https://youtu.be/L0332jC0YqY
Theme 14. Sexual violence and STI	https://youtu.be/x3DlLe6ec6s
Theme 15. Public policies on sexually transmitted infections	https://youtu.be/m0bakYE43h4

STI: sexually transmitted infections Source: General Coordination for the Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Table 2 – Categorization of questions received during the webinars on Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections – 2020.

Category	Description
Prevention	Topics related to prevention of transmission of sexually transmitted infections, which include Combined Prevention, HIV Post-Exposure Prophylaxis, HIV Pre-Exposure Prophylaxis and vaccines.
Assistance and treatment	Questions approaching the clinical management of people with sexually transmitted infections, including biological aspects and clinical presentation of diseases such as "clinical signs" and "etiology, transmission and manifestations", in addition to case discussion, with questions about definition of diagnosis from laboratory tests or clinical interpretation of test results ("diagnosis") and questions about case follow-up ("clinical and laboratory follow-up"). Questions about tracking of diseases and referring to the vaccine as a form of treatment are also included in this item.
Testing, diagnosis and tracking	Topics covering more direct issues about diagnostic tests, which exclude discussion of specific clinical cases with clinical diagnosis, through interpretation of laboratory test results.
Management of sexually transmitted infections	Topics covering issues of service network organization, referral and counter-referral.
Epidemiological surveillance	Topics covering doubts about notification, surveillance of antimicrobial resistance, prevalence and incidence of diseases, and other topics of epidemiological surveillance.
COVID-19 and sexually transmitted infections	Topics on COVID-19 related to sexually transmitted infections

Source: General Coordination for the Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Table 3 – Distribution of access* to webinars on Clinical Protocol and Therapeutic Guidelines for Compreehensive Care for People with Sexually Transmitted Infections – 2020, according to theme.

Date	Discussion title	Number of synchronous accesses	Number of synchronous access countries	Number of accesses to YouTube SBDST repository until 11/31/2021	Number of accesses to YouTube Webinars repository until 11/31/2021	Number of accesses to the AVASUS-UFRN repository until 08/17/2020 at 10:00 am	Number of asynchronous accesses	Total synchronous and asynchronous accesses
06/05/2020	Epidemiological surveillance of STIs – syphilis	394	5	2,189	1,252	1,877	5,318	5,717
13/05/2020	Acquired syphilis	2,575	10	2,747	884	1,435	5,066	7,651
20/05/2020	Vertical transmission of syphilis	3,036	8	1,380	577	2,484	4,441	7,485
25/05/2020	Tests for syphilis diagnosis	2,191	6	2,111	579	2,120	4,810	7,007
27/05/2020	Infections that cause vaginal discharge	1,719	7	1,624	480	3,291	5,395	7,121
03/06/2020	Infections that cause cervicitis	1,359	10	2,595	287	1,586	4,468	5,837
10/06/2020	Infections that cause urethral discharge	1,603	8	1,051	279	2,255	3,585	5,196
17/06/2020	Infections that cause genital ulcer	2,109	8	1,156	758	1,641	3,555	5,672
24/06/2020	Pelvic inflammatory disease	1,329	9	1,131	743	2,151	4,025	5,363
01/07/2020	HPV infection	1,894	6	856	1,163	3,565	5,584	7,484
08/07/2020	Laboratory diagnosis for STI	1,724	10	710	248	0	958	2,692
15/07/2020	Zika virus	1,023	10	201	169	0	370	1,403
22/07/2020	HTLV	1,565	6	650	376	0	1,026	2,597
29/07/2020	Approach to STIs centered on the sexually active person	1,350	8	155	863	0	1,018	2,376
	Grand total	27,164	125	18,921	9,088	22,405	50,414	77,703

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acquired syphilis, vertical transmission of syphilis and syphilis diagnostic tests, totaling 27,860 accesses. Human T-cell lymphotropic virus (HTLV) infection had a surprising participation, since it is an STI still little known by the general population when compared to others such as HIV, viral hepatitis, syphilis, and human papillomavirus (HPV), accounting for 2,597 accesses. Also noteworthy was a webinar dedicated to the laboratory diagnosis of STIs, which addressed the techniques contained in the PCDT-IST as a whole, covering all conditions.

Furthermore, the PCDT-IST 2020 webinars had international reach, as shown in **Figure 2** by the synchronous international accesses of 27 countries on the MediaCenter page. Questions were received also from health professionals and researchers residing outside Brazil, which reinforces the wide reach of scientific events about STIs in virtual format.

Table 3 – Continuation.

Date	Discussion title	Number of synchronous accesses	Number of synchronous access countries	Number of accesses to YouTube SBDST repository until 11/31/2021	Number of accesses to YouTube Webinars repository until 11/31/2021	Number of accesses to the AVASUS-UFRN repository until 08/17/2020 at 10:00 am	Number of asynchronous accesses	Total synchronous and asynchronous accesses
05/08/2020	Sexual violence and STI	1,893	6	192	183	0	375	2,274
12/08/2020	Public policies for sexually transmitted infections	1,400	8	173	247	0	420	1,828
	Grand total	27,164	125	18,921	9,088	22,405	50,414	77,703

STI: sexually transmitted infections; HPV: Human papillomavirus; HTLV: Human T-cell lymphotropic virus. *Number consolidated from all accesses over the 16 sessions, including synchronous accesses and accesses to the channels available as a repository (YouTube of the Brazilian Society of Sexually Transmitted Diseases, with access until 11/30/2021; webinars on infections sexually transmitted diseases on YouTube; and Virtual Learning Environment of the Unified Health System—Universidade Federal do Rio Grande do Norte). Source: General Coordination for the Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

*Location of synchronous accesses over the 16 sessions on the MediaCenter page. Source: General Coordination for Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Figure 2 – Distribution of access* to webinars on Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections – 2020, according to participating countries.

In addition to the information obtained by the number of virtual accesses, participants were offered the possibility to register prior to or during the 16 sessions by completing a digital form. In the registration form, information on participants' state of residence was collected (**Figure 3**).

The spatial distribution of registrations in webinars confirmed the participation of health professionals, health students, managers and researchers on the subject of STIs from all 27 federative units of Brazil. **Figure 3** shows a greater participation from the states of Rio de Janeiro, Espírito Santo, São Paulo, Minas Gerais, and Bahia. The number of participants enrolled from these states accounted for about 50% of the total number across the national territory.

The questions sent to the speakers during the sessions were an interesting source of information. They were categorized into six main themes: prevention, epidemiological surveillance, diagnostic testing, care and treatment, management in STIs, and COVID-19 and STIs. The percentage distribution of these categories in each PCDT-IST 2020 webinar session is shown in **Table 4**.

A total of 523 questions were received by speakers. Of these, 50% were allocated in the category of care and treatment, 22% in Health services management for STI, 8% in prevention and diagnostic testing, 7% in epidemiological surveillance, and 6% in COVID-19 and STIs. It is noteworthy that issues related to care and treatment represent most of the questions in most sessions, with the exception of the themes related to sexual violence and STIs, and public policies for STIs — in which STI management questions were more frequent —, and also in the session about approach to STIs centered on the sexually active person, in which questions about STI prevention predominated.

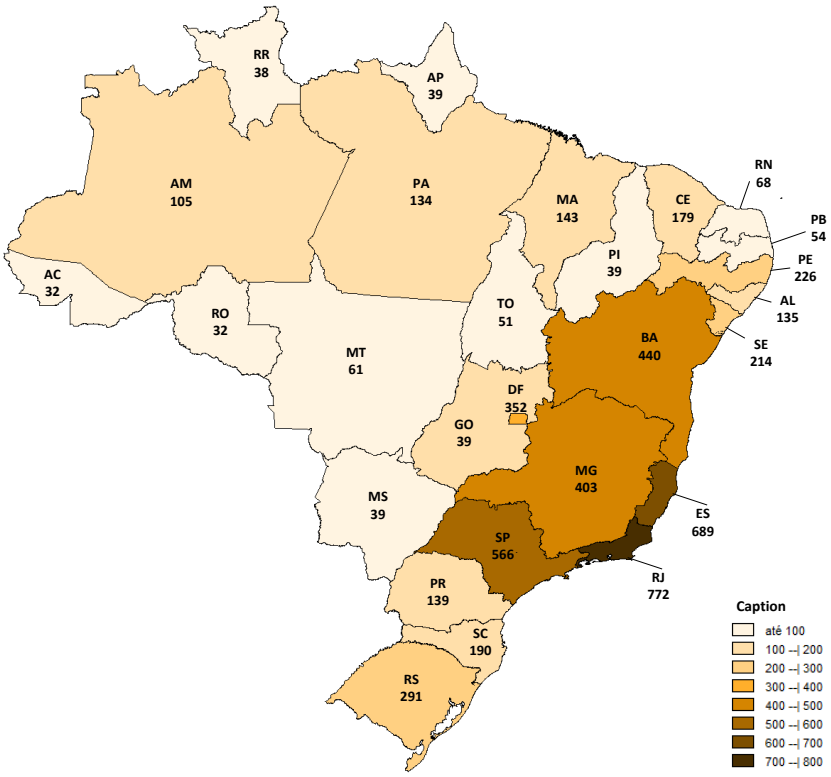
Participants enrolled in the PCDT-IST 2020 webinars were also offered the possibility to fill in an evaluation questionnaire formulated by the support team of PAHO, which was involved in the webinars, and sent by email to registered participants after each session. The evaluation form collected sociodemographic data such as state, municipality, professional category and current role of participants; for the evaluation of the platform that hosted the session, questions addressed access, moderators' and speakers' audio, participants capacity and chat use; open-ended questions were also posed and encompassed aspects in the session that benefited participants.

The categories identified for the analysis of each session were:

1. Accessibility, professional updating, technical knowledge, and exchange of experience;
2. Content, objectivity, didactics, qualification of speakers;
3. No response/does not apply.

Different opinions could be added, as long as they had a common objective.

The Southeast regions was the region where most participants enrolled from in the sessions, and also the one that best evaluated the initiative. Considering the total of 2,766 registered participants



*Registrations were not mandatory to access the sessions, but were used by participants to ask questions and obtain a declaration of participation.
Source: General Coordination for the Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Figure 3 – Distribution of registrations* to webinars on Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections – 2020, according to Brazilian federative unit.

who evaluated the event, 1,301 (47%) were from the Southeast region. Of these, 424 participants said they had benefited from the sessions in category 1, 790 in category 2, and only 87 in category 3. The Northeast region ranked second in participation — 683 (25%) registered participants, of which 238 evaluated the sessions in category 1, 410 in category 2, and 35 in category 3.

Table 5 lists the categories of answers according to the participants' professional category. Some categories, such as nurses and

Table 4. Distribution of questions by topic and category, in the webinar sessions on Clinical Protocol and Therapeutic Guidelines for Compreehensive Care for People with Sexually Transmitted Infections – 2020.

n	Theme/category	Prevention	Epidemiological surveillance	Diagnostic tests	Assistance and treatment	STI management	COVID-19 and STIs	Total	%
1	Acquired syphilis	5	13	4	37	6	9	74	14
2	Vertical transmission of syphilis	0	5	5	41	11	4	66	13
3	Syphilis diagnostic tests	3	3	19	35	9	2	71	14
4	Infections that cause vaginal discharge	1	0	0	20	5	2	28	5
5	Infections that cause cervicitis	0	0	2	16	7	0	25	5
6	Infections that cause urethral discharge	0	0	0	8	3	0	11	2
7	Infections that cause genital ulcers	0	0	1	13	0	1	15	3
8	Pelvic inflammatory disease	6	0	1	27	1	1	36	7
9	Human papillomavirus (HPV) infection	10	4	0	24	8	3	49	9
10	Laboratory diagnosis for STI	0	1	5	8	6	0	20	4
11	Zika virus infection	2	4	0	7	2	0	15	3
12	Human T-cell lymphotropic virus (HTLV) infection	3	4	4	21	17	2	51	10
13	Approach to STIs centered on the sexually active person	5	0	0	1	2	2	10	2
14	Sexual violence and STI	3	1	0	1	14	1	20	4
15	Public policies for sexually transmitted infections	2	0	0	3	23	4	32	6
	Total	40	35	41	262	114	31	523	100.00
		8%	7%	8%	50%	22%	6%	100%	

Source: General Coordination for the Surveillance of Sexually Transmitted Infections; Department of Chronic Condition Diseases and Sexually Transmitted Infections; Secretariat of Health Surveillance; Ministry of Health of Brazil.

Table 5 – Categorization of evaluation questionnaire answers of the webinars on Clinical Protocol and Therapeutic Guidelines for Compreehensive Care for People with Sexually Transmitted Infections – 2020, according to the participants' professional category.

Professional category	Accessibility, updating, technical knowledge learned, exchange of experience		Content, objectivity, didactics, qualification of speakers		Did not answer/ Not applicable		Total	
	n	%	n	%	n	%	n	%
Total (n=2,766)								
Administrator	4	20.00	14	70.00	2	10	20	0.72
Social worker	47	41.96	61	54.46	4	3.57	112	4.05
Biologist	11	24.44	33	73.33	1	2.22	45	1.63
Dental surgeon	26	43.33	30	50.00	4	6.67	60	2.17
Nurse	357	33.97	618	58.80	76	7.23	1,051	38.00
Student in the health field	111	34.69	193	60.31	16	5	320	11.57
Pharmacist	51	31.10	97	59.15	16	9.76	164	5.93
Physical therapist	1	14.29	6	85.71	0	0	7	0.25
Physician	197	35.43	316	56.83	43	7.73	556	20.10
Nutritionist	8	57.14	2	14.29	4	28.57	14	0.51
Laboratory professional	17	70.83	7	29.17	0	0	24	0.87
Psychologist	52	40.63	75	58.59	1	0.78	128	4.63
Nursing technician/assistant	6	24.00	19	76.00	0	0	25	0.90
Occupational Therapist	1	10.00	9	90.00	0	0	10	0.36
Other	71	30.87	153	66.52	6	2.61	230	8.32
Grand total	960	34.71	1,633	59.04	173	6.25	2,766	100

Source: Evaluation questionnaire of the webinars on Clinical Protocol and Therapeutic Guidelines for Compreehensive Care for People with Sexually Transmitted Infections – 2020.

physicians, had a greater participation (38% and 20%, respectively). Of these, 97% of nurses and 92% of physicians reported beneficial aspects of category 1 and 2.

DISCUSSION

The PCDT-IST 2020 webinars had great participation in a virtual update training on the topic of STI, at a time of restriction and social distance. All PCDT-IST 2020 webinars gathered 77,703 synchronous and asynchronous accesses across national territory, from all federative units, and international territory. Virtual attendees sent in a large number of questions and comments in all sessions, and, overall, positively evaluated the event held in mid-2020.

The COVID-19 pandemic should have an impact on actions against STIs — issues that should be better evaluated in the months and years that follow[10] —, since the moment demanded a coordinated response from public and private health institutions never seen in these proportions on a world scale[11]. The model proposed by the PCDT-IST webinars considered the wide network of primary health care workers, so it offered open, free, self-instructional access and in distance education format (EAD), with a commitment to strengthening SUS' ability to cope with STIs even in adverse situations.

It then became evident how powerful it was to use distance education to qualify professionals, since a large number of professionals in different locations was reached. Distance education is a systematic teaching-learning process, in which the exchange of experiences and knowledge takes place, exploring the potential of parts involved and allowing individual or group study through the use of technologies, despite the fact that students and teachers do not physically meet at the same time and in the same space. In this context, the professional is the protagonist and the specialist is a mediator of the learning process[12]. Distance education is an important tool for the process of continuing education within SUS[13].

In addition to the synchronous broadcasting on the MediaCenter page, the PCDT-IST 2020 webinar sessions were recorded and made available on other digital platforms such as the SBDST YouTube page (https://www.youtube.com/c/SBDSTSociedadeBrasileiradeDST) and the SUS Virtual Learning Environment (AVASUS) for training in STIs for health professionals (https://avasus.ufrn.br/). Therefore, the asynchronous participation of health professionals, managers, students and researchers who might not be able to be present at the time of the sessions was possible.

AVASUS is a virtual platform that aims to qualify health professionals and workers, but is also open to students and the general population, with modules designed within the needs of SUS and addressing issues of management, surveillance and comprehensive health care[14]. The use of AVASUS has been the basis of distance education[15-17], namely regarding syphilis and other STIs[18,19]. Experience with the use of AVASUS have shown the importance of this online educational tool in the context of a pandemic and social distancing[20,21]. The virtual meetings of PCDT-IST 2020 webinars with topics related to syphilis (acquired syphilis, vertical transmission of syphilis, and tests for syphilis diagnosis) showed greater participation, which portrays a greater interest in qualification in this topic.

The reach of the PCDT-IST 2020 webinars surprised the organizers in terms of synchronous and asynchronous accesses. The geographical reach was also relevant, with accesses from all federative units in Brazil and from outside the country. This reflects the relevance of STIs in Brazil and in the world. According to data from the World Health Organization (WHO), more than one million people acquire curable STIs every day, and STI morbidity and mortality are higher in countries with limited financial resources[2].

In order to guarantee the maintenance of the system and the continuity of assistance to the population, and considering the advances and changes in the health sector, it is important to invest in permanent education for professionals who work in the various health units, so that they are aware of the changes in clinical protocols and are able to diagnose and treat patients properly[22]. The use of distance learning through digital platforms was proven a powerful strategy[23,24] to promote permanent education of teams. The number of accesses by participants and the large number of questions sent show that webinars made available in different digital platforms allowed attendance at different times, according to participants' availability.

According to Araújo[25], digital events have several benefits:

> The advantages of digital events, both virtual and hybrid, are numerous, starting with the greater reach of the audience, usually limited by geographic distances. That is, it is possible to reach people who cannot be physically present, but can participate remotely. Regarding cost-effectiveness, it is possible to reduce costs of events such as transport, food and accommodation for participants. In addition to demanding less physical space, it requires less manpower, which allow working with fewer professionals. The possibility of the content being accessed after the completion of the transmission is also worth mentioning[27].

In Brazil, the large number of participations in the PCDT-IST 2020 webinars from the Southeast region can be explained by the higher population density in these states, with a larger number of health professionals and services. However, it is important to point out the need to create mechanisms so that these virtual events can reach health professionals who work in places of difficult access and far from teaching and research centers.

The number of questions compiled at the end of all PCDT-IST sessions showed the professionals' capacity of expansion and guidance. The evaluation of categories of the most common questions per webinar reflects the greatest difficulties of participants regarding the themes, functioning as a guide for the planning of actions by the IST coordination. The categorization of questions sent by participants can help to portray the reality in that territory, providing the CGIST/DCCI/SVS/MS with the opportunity to approach specific difficulties, enabling the development of strategic planning at the federal level.

The webinars allowed the decision-making for actions planned by CGIST/DCCI/SVS/MS to involve the largest number of actors, represented by the participants and the technical team of the Ministry of Health. According to Rivera[26], strategic management promotes an integration between operational and strategic features, providing a continuous, flexible and adjusted horizontal planning. The author emphasizes that strategic communication in the organization leads all parts involved to prepare to identify opportunities, not

to mention the decentralization of power and division of responsibilities in decisions.

In all themes, many doubts about care and treatment remain, with the management category being the second most common, which shows the need for a more careful look at the organization of STI health network in states and municipalities. According to Chorny[27], planning is a prior decision about actions that will be taken to change unsatisfactory conditions in the present or to prevent adequate conditions from weakening in the future.

Virtual meetings were and continue to be highly disseminated strategies in the scientific and professional environment in the COVID-19 pandemic; this method, in addition to making events more accessible, brings a significant reduction in operating costs[25]. However, it is even more relevant to check the listener's opinion about the quality of presentations and speakers, the knowledge acquired and its possible applications in daily practices. The evaluation of webinars by participants after each session allowed prompt and timely improvements in the transmission tool, the content, and the didactics used.

In addition to updates on topics related to PCDT-IST, the PCDT-IST 2020 webinars provided other strategic actions for the qualification of health professionals. The publication of a consensus-type supplement of each chapter of the PCDT-IST in *Revista Epidemiologia e Serviços de Saúde (RESS)* is highlighted, prioritizing epidemiological and clinical management of each STI condition — HIV infection and viral hepatitis included — [28], with articles published in Brazilian Portuguese and Spanish. As a form of extending scientific reach, in partnership with the Brazilian Society of Tropical Medicine, consensus articles were also published in English in the Journal of the Brazilian Society of Tropical Medicine[29]. With the experience acquired in the PCDT-IST 2020 webinars, the Ministry of Health, in partnership with PAHO and UFRN, launched the Comprehensive Care for People with STIs course in 2021, a 90-hour self-instructional virtual course and certification that functions as an outreach course, with free registration and open to the public (AVASUS: https://avasus.ufrn.br/local/avasplugin/cursos/curso.php?id=500).

Thus, the fight against STIs cannot stop in the COVID-19 era, and this article brings the Brazilian experience of online training on STI guidelines and recommendations, which can and should be adapted to new ideas for the training and education of health professionals for coping with STIs.

Strengths

Data analysis reinforced the importance of this type of innovation in education, especially in the scenario of restricted face-to-face meetings experienced during the COVID-19 pandemic. The possibility of sending questions to the speakers allowed a greater interaction and enriched the debates. The fact that the webinars were recorded and made available on an online platform that is free of charge allowed permanent access to the content, especially for those who were unable to attend the lectures live. Finally, the importance of the partnership between the Ministry of Health, PAHO and the Brazilian Society of Sexually Transmitted Diseases is highlighted to increase the reach of trainings and the engagement of health professionals.

Limitations

The online training strategy depends on local availability of quality internet service. Brazil is a country with continental dimensions and very different realities, so alternatives for accessing content offline would provide the opportunity for all interested health professionals to access content

CONCLUSION

The experience of PCDT-IST-2020 webinars showed that health professionals remained interested and engaged in the STI topic during the COVID-19 pandemic, given the large number of hits and inquiries received, which were considerably higher than expected in a typical face-to-face training. The interactions with speakers promoted discussions of clinical cases experienced in clinical routine and favored the assimilation of content. Therefore, we can conclude for the great potential of innovative methods in continuing education to advance in the fight against STIs.

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Participation of each author

PCG: Conceptualization, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. ASDS: Conceptualization, Data curation, Formal analysis, Investigation, Software, Writing – original draft. LBS: Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. MGA: Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. NMSM: Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. MAAL: Validation, Visualization, Writing – review & editing. MRLP: Validation; Visualization, Writing – review & editing. GFMP: Validation, Visualization, Writing – review & editing. AEM: Conceptualization, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Conflicts of interest

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