

MACHINE TRANSLATION

Guidelines for Primary Healthcare Facilities and Specialty Clinics on the Implementation and Use of Videoconsultation in the Diagnosis and Treatment of Depression – telemedicine model for psychiatry

Report prepared within the project " Tackling social inequalities in health with the use of e-health and telemedicine solutions", co-financed by the Norwegian Financial Mechanism 2014-2021 and the Polish state budget

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1. Depression - prevalence in the Polish population and experience with the use of telemedicine in helping people suffering from depression

1.1 Depressive Symptoms

Typically, depressive episodes are characterized by low mood, loss of interests and ability to feel pleasure, lack of motivation and energy, increased tiredness and decreased activity. The lowered mood fluctuates little from day to day, may show characteristic fluctuations throughout the day, and is relatively unaffected by current events. Attention problems, low self-esteem, feelings of guilt, a tendency to pessimism, suicidal thoughts and tendencies to disturbances in sleep and appetite are also common. Occasionally, anxiety, distress, motor excitement, irritability, or hypochondriacal complaints come to the fore (World Health Organization 2000).

1.2 Epidemiology of depression

Depression is a serious mental disorder that can occur at any age. resulting from the interaction between social, psychological and biological factors. It is estimated that approximately 264 million people worldwide experience depression (World Health Organization 2020). Depression ranks among the most common causes of disability and is widely recognized as one of the key challenges from a public health perspective (Ferrari et al. 2013).

A study conducted a decade ago, "Epidemiology of Psychiatric Disorders and Access to Psychiatric Health Care - EZOP Poland," found that depression occurs in 3% of adult Polish residents during their lifetime (Kantorska-Janiec 2012). In the EZOP II study, the results of which are still being compiled, this percentage was 3.85% (Moskalewicz and Wciórka, report in preparation). It is worth noting that these rates are lower than in many other countries where epidemiological studies have been conducted using similar methodology (Kessler and Bromet 2013).

At the Institute of Psychiatry and Neurology in 2020, a diagnosis of depression (essential or comorbid; ICD-10 diagnostic categories F32-F33) was reported for 426 psychiatric hospitalizations and for 12,321 consultations at a clinic-based psychiatric outpatient clinic.

1.3 Impact of the COVID-19 pandemic on the prevalence of depression and other mental disorders

It is important to note that the COVID-19 pandemic has had a very large impact on the prevalence of depression and other mental disorders and has forced greater use of ICT solutions for psychiatric health care. Previous studies on the impact of the COVID-19 pandemic on indicators of mental health and well-being indicate that it has contributed to, among other things, an increased risk of depressive and anxiety symptoms, PTSD, general levels of perceived stress, sleep disturbances (Rajkumar 2020; Xiong et al. 2020), suicidal thoughts and tendencies (Bruffaerts 2021), feelings of loneliness (Holt-Lunstad 2021), and altered alcohol consumption patterns (Szajnoga et al. 2021; Jacob et al. 2021). Among the groups at greatest risk for mental health deterioration during a pandemic are coronavirus-infected individuals and their families (Rajkumar 2020), quarantined individuals (Brooks et al. 2020), women (Xiong et al. 2020), individuals under 40-45 years of age (Xiong et al. 2020; Gambin et al. 2021) (although the elderly are also thought to be particularly vulnerable to the deleterious effects of social isolation or loneliness associated with a pandemic [Holmes et al. 2020]), people of low socioeconomic status and unemployed (Xiong et al. 2020), people with chronic somatic illnesses or psychiatric disorders (Rajkumar 2020; Xiong et al. 2020), and health care workers (Rajkumar 2020; Bruffaerts 2021; Muller et al. 2020).

The association of pandemic COVID-19 with increased prevalence of depression has been particularly well documented. A meta-analysis of studies conducted in different countries on the general population found up to a 7-fold increase in the proportion of people experiencing depression during the pandemic (Bueno-Notivol et al. 2021).

1.4 Prevention of depression

Many activities can be identified in the literature that contribute to the prevention of depression. One area that should be taken care of is physical activity. The risk of depression can be significantly reduced, and when depression does occur, its symptoms can be minimized - through regular physical activity, undertaken at least 3 times a week.

Another prevention strategy is to establish and maintain interpersonal relationships. Contact with other people counteracts social isolation. Another strategy is to get regular sleep and rest.

An important aspect in preventing depression is avoiding consciousness-altering drugs, such as alcohol, narcotics, or tranquilizers.

1.5 The use of telemedicine in helping people experiencing depression

A recent systematic review of the literature (Guaiana et al. 2021) on the use of telepsychiatry (in the form of videoconsultation) for depression found that in some studies, patient satisfaction levels did not differ between care provided face-to-face and remotely; in others, higher levels of patient satisfaction with telepsychiatry were observed. A similar pattern of results was observed when evaluating the effectiveness of interventions - in the vast majority of studies, there was either no difference between face-to-face and remote-based interventions, or better outcomes were obtained in groups using telepsychiatry. The review results also indicate comparable or better cost-effectiveness of telepsychiatric solutions relative to face-to-face care. In the discussion, the authors note that some indications are that while patients found remote care to be at least as acceptable and satisfying as traditional ("face-to-face") care, psychiatrists may nevertheless prefer face-to-face contact - a potential barrier to implementing telepsychiatry.

Data from the literature suggest that telepsychiatry may have varying effectiveness depending on certain characteristics of patients with depression. Identifying these factors appears to be of great practical importance. Smolenski et al (2017), for example, showed that patients with more severe symptoms and who felt more lonely benefited less from telepsychiatry (video-consultation-based treatment) than from face-to-face care.

So far in Poland, treatment for depression has been provided in the office of a psychiatrist. The COVID-19 pandemic forced health care facilities to adapt to the prevailing sanitary regime. However, treatment was provided by telephone and video consultations were not available to medical professionals. Psychiatric diagnosis and treatment, unlike diagnosis and treatment by physicians of other specialties, in addition to traditional conversation, is based on the assessment of nonverbal signals that are impossible to capture during telephone contact. The use of video-consultation solves this problem and in addition to talking to the patient it is possible to observe his behaviour.

It is recommended that a two-year pilot of the proposed teleinformatics solution should include a total of 2,000 people suffering from depression - about 1,500 patients with depression reporting to a specialist psychiatric clinic and about 500 patients with depression reporting to primary care physicians. A minimum of 10% of patients should come from less developed areas and towns far from large cities. It seems that such a number of groups is sufficient for a reliable evaluation of the implemented service and, on the other hand, takes into account practical possibilities and possible organizational and technical difficulties related to its implementation.

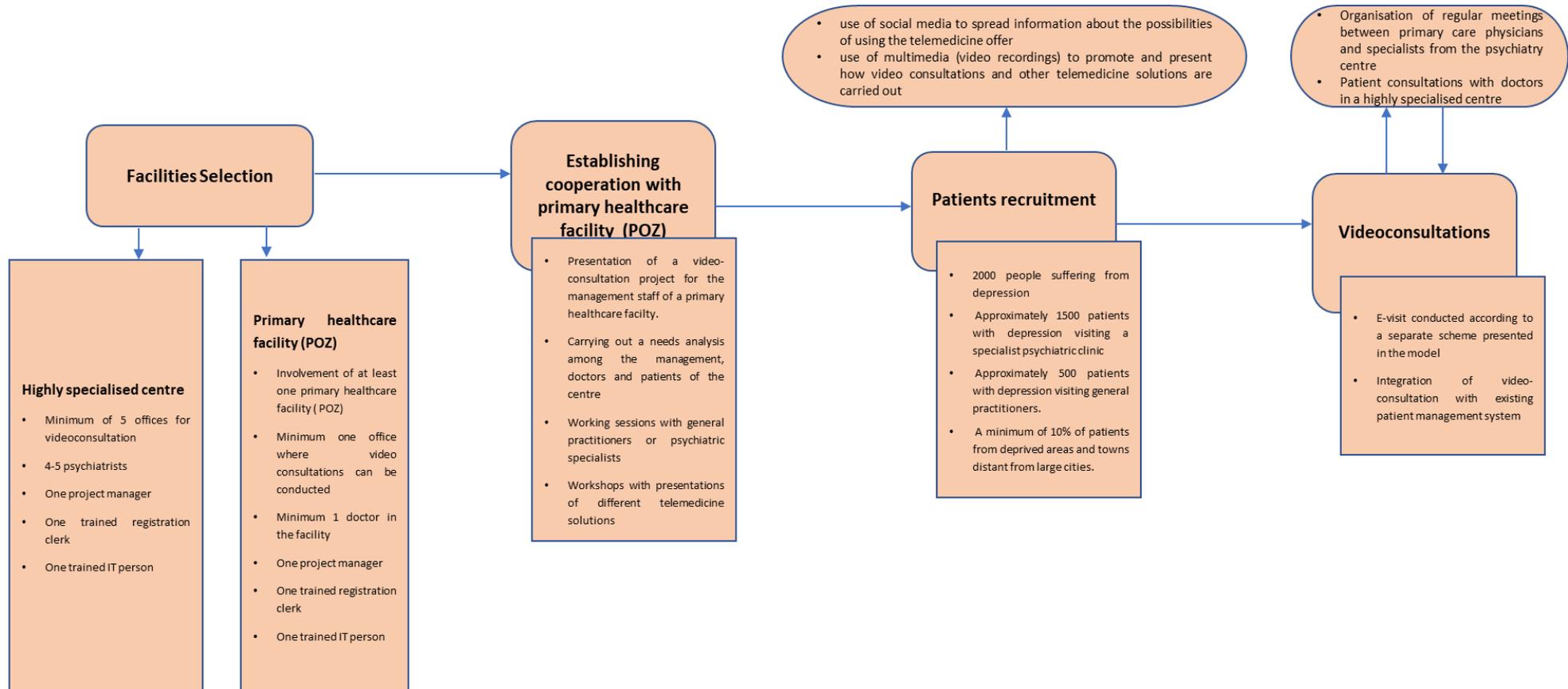
The pilot should involve 4-5 psychiatrists in a highly specialized centre (e.g., an institute) and at least one doctor at the level of primary care. At the same time, it is assumed that within 24 months of the pilot implementation 200 video consultations will be conducted between physicians employed in the highly specialized centre and in the primary healthcare facility (POZ).

The leading role in the implementation of the pilot project will be played by a highly specialised centre, e.g. (institute), which will be responsible for the supervision of the proper implementation of tasks, cooperation with primary healthcare facility (POZ). At the same time, the highly specialised centre will also provide services in the telemedicine model by providing a team of psychiatrists. In the pilot stage, the specialist centre should cooperate with at least one primary healthcare facility (POZ).

The pilot project may be implemented in international partnership, e.g. with a Norwegian partner with experience in implementation of similar projects in the field of psychiatry. The role of the partner will be mainly to provide substantive support to the Polish side, through experience exchange, sharing of knowledge in the field of telemedicine or prevention projects by means of consultations, meetings, conferences, as well as participation in the development of information and training materials.

The implementation of the pilot project also requires preventive and informational-promotional actions, including training on mental health. The preparation of training materials for medical professionals and patients should include information on depression prevention. Similarly, prevention issues should be addressed at conferences. The website, the aim of which will be to conduct information and education activities during the project implementation period, should also include content related to depression prevention.

Scheme of the telemedicine model for videoconsultation in the field of psychiatry



2. Identification of stakeholders who would be supportive of implementing videoconsultation at primary care (POZ) and mental health (PZP) clinic levels

From the perspective of implementing videoconsultation offerings for the diagnosis and treatment of depression into healthcare settings, it is important to identify a number of stakeholders who have a stake in the success of such efforts. Their interest and involvement is crucial.

At both the primary care and mental health clinic (PZP) levels, there are three areas that need to be considered when planning to implement video consultation into organizations.

The first area is the management of the organizational unit, which provides support related to the organization of the institution's environment for the introduction of solutions in the area of telemedicine, for example, providing staff conducting videoconsultations and providing IT support, training of personnel, preparation of offices and technical infrastructure.

Another area, which should be taken into account when implementing activities in the field of videoconsultation at the level of primary care and specialist clinics, is the clinical perspective. Activities in the field of telemedicine should be a part of the institution's strategy. Providing videoconsultation should be one of the options that would be available to patients, improving access to treatment, and not replacing the existing offer.

The third area is technical issues related to the implementation of new IT solutions. In particular, the integration with older systems used in the unit and the support of the IT department in the implementation of solutions from the telemedicine (video-consultation) area should be taken into account. This area includes the availability of an integrated suite of information systems such as HIS (Hospital Information System), allowing for comprehensive service of the healthcare entity, computer infrastructure allowing for audio and video connections, access to a stable Internet connection, etc.

At both primary care and mental health clinic levels, similar stakeholder groups can be identified:

- patients and patients' families and relatives,
- General practitioners (GPs) working in primary healthcare facilities,
- physicians of different specialties who refer patients for consultation because of symptoms of mental disorders,
- representatives of social welfare (social workers) and justice (court, prosecutor), referring the patient for a health opinion (Székely et al. 2017).

3. Strategies for implementing video-consultation in healthcare facilities

Ways of implementing videoconsultation in primary healthcare facility (POZ) and mental health clinic (PZP):

- Prepare guidelines and distribute them to primary healthcare (POZ) and mental health (PZP) facilities, which will include instructions for medical professionals on the criteria for including and excluding patients from the possibility of using the telemedicine service - videoconsultation.
- Preparation of a model agreement for primary healthcare facility (POZ) and specialist clinics, allowing for videoconsultation between a primary care physician and a specialist in psychiatry in order to discuss the patient's condition, the possibility of referring the patient to a specialist institution, consult the

implemented treatment. The terms of the video-consultation should be included in the agreement with regard to the time and method of contact.

- Implementation of video-consultation in an institution should not significantly affect the current procedures for working with patients. Videoconsultation should be integrated with the facility's existing patient care procedures and IT system. Its introduction should contribute to increasing the quality of diagnostic and therapeutic interventions, and not to introduce significant changes in the functioning of the facility.

- GPs and specialists should be able to use video consultation whenever they need to, providing flexibility in its use in patient care.

- Organizing periodic meetings between GPs and specialists from mental health clinics (PZPs) (Székely et al. 2017).

4. Engage facility management in the implementation of video consultation

Stakeholder engagement strategies:

- Present the videoconsultation project to the management of the primary care or mental health clinics (PZP).

- Organize several working sessions with GPs or psychiatrists to discuss the videoconsultation service.

- Engaging physicians and other medical staff with experience in using telemedicine tools in treating depression to give lectures and training.

- Engaging managers of organizational units in primary healthcare and mental health clinics (PZP) through personal meetings at the institution to discuss the possibilities of implementing videoconsultation.

- Engaging medical and administrative staff by interviewing them about the possibility of implementing video consultations.

- Conducting a needs analysis among the facility's management, physicians, and patients using qualitative research methods, e.g. by engaging them in focus group interviews or individual interviews.

Communication channels:

- verbal, through personal meetings with various stakeholder groups,

- written, by sending information on paper or by e-mail,

- workshops with presentations on various telemedicine solutions,

- Use of social media to spread information about the possibilities of using telemedicine offer,

- use of multimedia (video recordings) to promote and present how to conduct video consultations and other telemedicine solutions (Székely et al. 2017).

5. Description of the solution from the technological point of view

It is suggested that the recommended software used in telepsychiatry should be an integrated suite of HIS (Hospital Information System) type information systems in view of the intensive large-scale

implementation of e-Health solutions (e-prescription, e-recall, e-commission, Electronic Medical Records) in the Republic of Poland in 2019 - 2021. These systems (e.g. AMMS by Asseco, OptiMED and e-Care by Comarch, CLININET by CompuGroup Medical, ESKULAP by Nexus Poland, and others) allow for a comprehensive service of the healthcare entity and enable the execution of the treatment process. They contain many functionalities, including a built-in or optional module responsible for establishing audio-video communication with the patient.

Such a system enables a medical professional (e.g. a doctor) to call a tool for video consultations with a patient directly from the virtual office visit window. Often, existing solutions even make it possible to establish audio-video communication with one or two clicks. These solutions are convenient and highly desirable to implement, as the connection is established from the patient's card (account) panel. Thus, it eliminates the risk of confusion and, moreover, the medical professional also has a window open containing relevant data about the patient's health status (see Figure 1 below). The tool allows for an audio-video conversation, but it is reasonable to deactivate the possibility for both sides of the conversation to turn the video channel on and off, and it should be allowed to suspend the call during which no audio or video is transmitted.

6. Proposed model of integration with existing eHealth architecture in Poland

Integration with the P1 Platform enables the exchange of medical information between institutions. All medical events are sent to the P1 Platform in real time. The main objective of the "Electronic Platform for Collection, Analysis and Sharing of digital Medical Records" project (P1) is to build an electronic platform of public services in the area of health care, which enables the collection, analysis and sharing of digital resources on medical events in accordance with the Act of 28 April 2011 on the information system in health care.

The P1 system will include information on medical events of all Polish citizens (regardless of payer) as well as citizens of the European Union and other countries, who will benefit from health services in Poland.

7. Technical, equipment and organizational requirements

Software that can be used:	Module in HIS system such as AMMS by Asseco / OptiMED and e-Care by Comarch / CLININET by CompuGroup Medical / ESKULAP by Nexus Polska
Equipment requirements A) Sender B) Recipient	A) Sender: Windows 10 / macOS / Linux type Ubuntu 18.04 or later: - Intel i5 or AMD Ryzen processor - min. 8GB Ram, - min. 250GB SSD, - Camera with min 480p resolution, 720p recommended, - Speakers, - microphone B) Recipient: Any device containing a camera, microphone, HTML5-enabled browser e.g. Personal Computer (desktop or laptop), Smartphone, Tablet. Recommended: Windows 10 / macOS / Linux type Ubuntu 18.04 or later, Android (Mobile), iOS (Mobile), Harmony OS.
Organizational requirements	In a highly specialized centre there should be a minimum of 5 offices that can be used for videoconsultation. In primary care there should be at least one office where such activities can be carried out. The offices should have access to a desktop computer, laptop or tablet and the Internet.

Implementers	<ul style="list-style-type: none"> - 4-5 psychiatrists in a highly specialized facility - A minimum of 1 physician in a primary healthcare facility - One person at each facility who is a project manager - One trained registration clerk per facility to handle video consultations - One trained IT staff member at each facility to implement and provide technical assistance to physicians and patients
Facility experience in project implementation	- The highly specialized centre, which is the pilot leader, must have experience in implementing projects funded by domestic (minimum 3) and foreign funds (minimum 3)

8. Description of the process and identification of entities involved in its implementation with the division of responsibilities and activities

8.1 Description of the connection establishment procedure

1. The initiation of the process of providing mental health services using an audio-video connection shall be initiated by the patient, as the person who intends to receive this form of service.
2. The patient:
 - a. through an inpatient visit at the treatment facility,
 - b. by telephone registration,
 - c. via Internet registration with the use of e-registration module available at the medical facility

selects the date of the planned videoconsultation (health care provided by means of direct communication transmitting sound and image; audio-video), i.e. the exact date and time, by themselves or with the help of the personnel of the health care unit (registrars, medical secretaries).

3. In case of registration during stationary visit, personnel of medical facility verifies patient's identity, collects possible consents (in case of 1st visit), enters patient's phone number and e-mail address into the system.
4. In case of remote registration for video counselling by phone, the treatment facility staff verifies the patient's identity by asking control questions (e.g. ID number, date of birth) based on the patient's data already in the system. If the patient has not used the services of this treatment facility before, it is recommended to suggest a stationary visit for registration or to use the e-registration module.
5. In the case of remote registration for video counselling through the e-registration module, if the patient logs in to this module using the Trusted Profile, it is not necessary to confirm the identity in person at the medical facility, even in the case of a patient who uses the services of a given facility for the first time. This is the most desirable and recommended solution, especially due to the widespread use of the Trusted Profile logging service. In the case of logging into the e-Registration module without the use of the Trusted Profile (i.e. with the use of login and password), in the case of a "first-time" patient it is necessary to create an account in the e-Registration module, and then to confirm the data provided and verify identity in person during a visit in a given medical facility.

6. After successful registration for videoconsultation by any of the above methods, the patient should receive an automatically generated SMS notification to the phone number and e-mail confirming the date of the videoconsultation.
7. The patient will then receive a text message (usually one day in advance) reminding them of the appointment and announcing that an invitation to call the doctor will be sent on the same day. The patient receives an SMS or e-mail message and a request to cancel the appointment if the patient is unable to make it.
8. The proposed model of providing services with the use of video-advice assumes that after proper registration, access to the video consultation does not require the patient to install special applications on their phones, set up access accounts, remember passwords, etc.
9. The initiator of an invitation to a video-counselling session is always a healthcare professional. For security reasons, it should never be the patient. As a rule, a medical professional connects from the seat of the medical entity or premises to which the medical entity has a legal title (e.g. premises rented for this purpose).
10. 10. services must be provided during working hours provided in the schedule of a given organizational unit notified to the National Health Fund (NFZ).
11. In existing HIS (Hospital Information System) solutions available on the Polish market, an invitation to an audio-video call sent by a medical professional is possible on the patient or caregiver contact information screen using the appropriate button/icon.

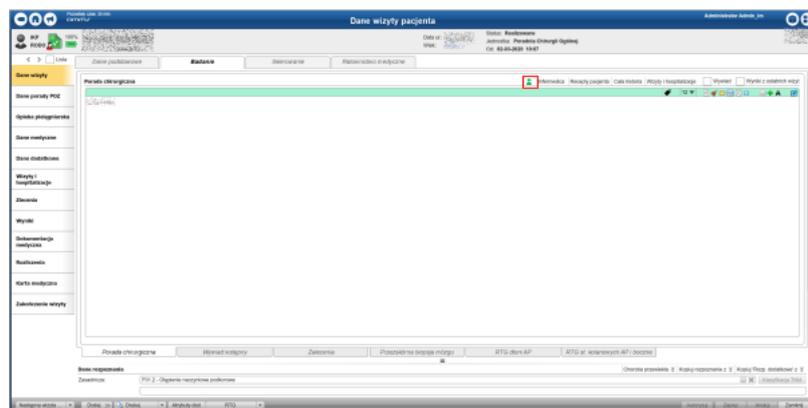


Figure 1 -Connection initiation module in the office part of the HIS system, the arrow indicates the button that a medical professional the medical professional must press

12. The patient is required to be punctual. If the patient fails to respond to a message inviting the patient to a service provided via audio-video transmission, medical professional shall make a telephone call to the patient in order to connection.

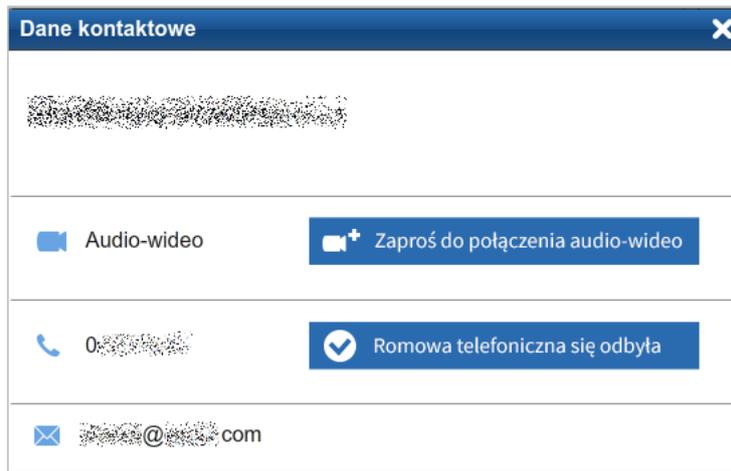


Figure 2 - The window that appears when the button/icon in Figure 1 is pressed. If the patient's details have been correctly entered, the medical professional can immediately establish communication with patient.

13. On the day of the visit, patients receive a message inviting them to the service provided via audio-video transmission.

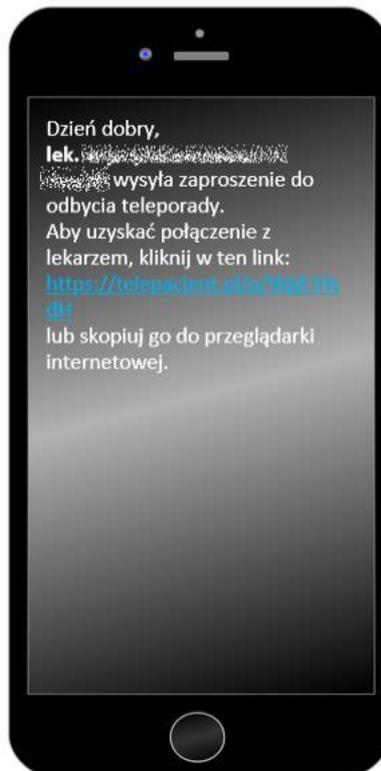
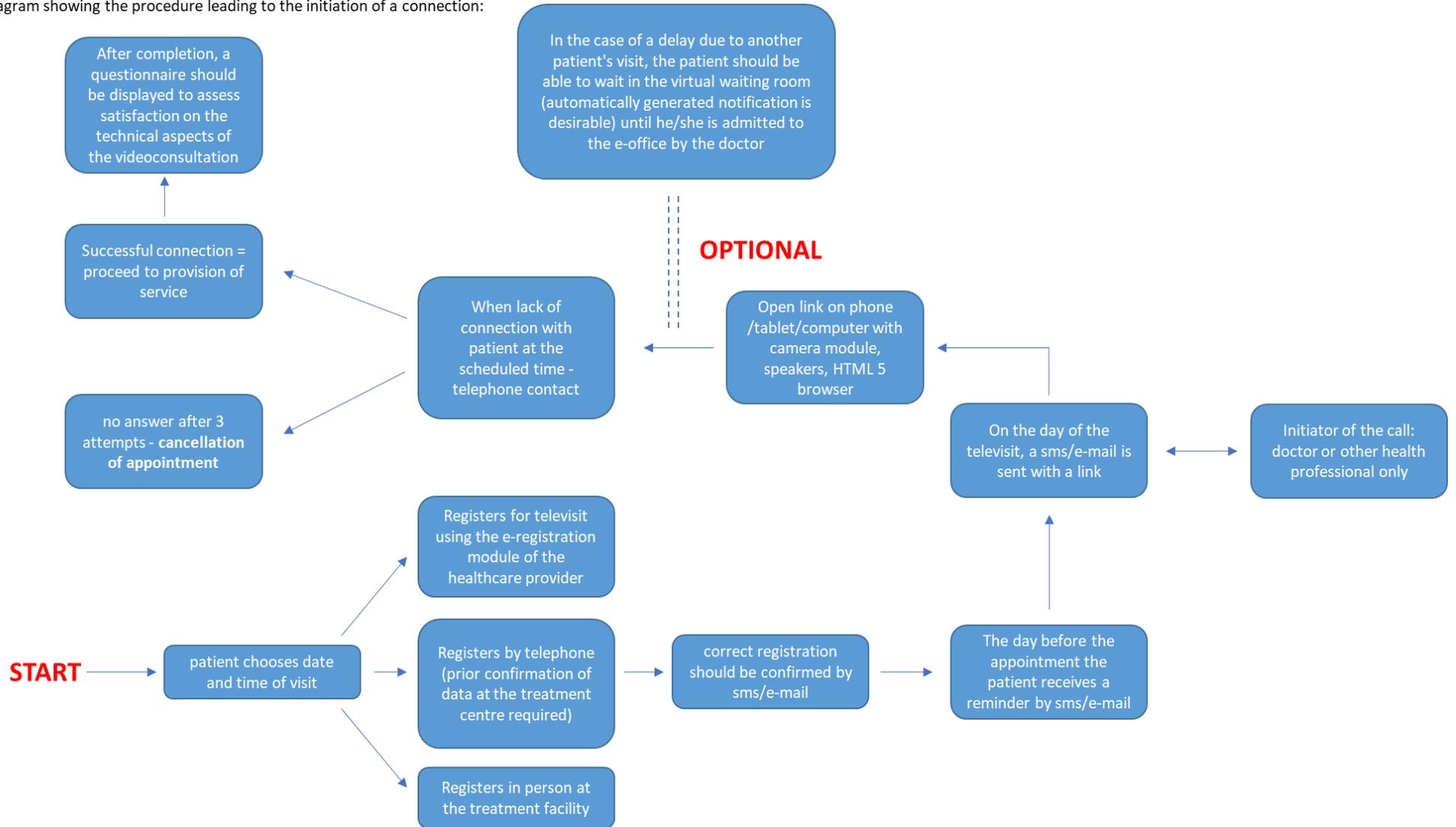


Figure 3 - An example of a message a patient receives from a health professional that contains a link to enable teleconsultation without installing any applications.

14. It is proposed that in case of 3 unsuccessful attempts to contact the patient at intervals of no less than 2 minutes, the video consultation should be cancelled and the patient should make a new appointment for this form of service.
15. It is desirable that the software used by a given healthcare provider, for optimal patient comfort, automatically informs of a delay in the provision of services. If a medical professional is not able to answer a call from a waiting patient at a predetermined moment because the previous session is still in progress, the implemented software, through built-in functionality, causes the patient to receive a text message (or e-mail). It contains information asking the patient to wait in the virtual waiting room or try again in 10 minutes.
16. In the available IT solutions, the medical professional is and should be the sole party managing the call. This also means that unless, for example, the doctor closes the connection, the patient will be able to reconnect using the same link sent earlier in the teleconsultation invitation.
17. For security reasons, if the connection is closed from the side of e.g. the doctor, the possibility to connect using the link sent earlier in the invitation will no longer be available.
18. It is proposed that after the completion of the videoconferencing process, the software used for videoconferencing should display a short questionnaire for the patient, guaranteeing full anonymity, during which the quality of the call will be assessed and, if implemented in a given facility, a satisfaction survey will be conducted.
19. Finally, it is proposed that in the case of problems with the connection, the medical professional should be able to initiate a phone call at any time. Existing software on the Polish market allows such action immediately from the software used to establish an audio-video connection.

Diagram showing the procedure leading to the initiation of a connection:



8.2 Inclusion and exclusion criteria for patients to use the video consultation service

Inclusion criteria:

- 18 years of age or older,
- Informed consent of the patient for the service provided; consent may be given in writing or verbally,
- ability to use smartphone, tablet, computer,
- access to broadband internet (for pilot participants, access may be funded),
- diagnosis of depression (diagnosis codes F32-F33 according to ICD-10).

Exclusion criteria - direct contact with a physician is recommended in the following situations:

- diagnostic/first-time visit,
- deterioration of health condition requiring in-depth assessment of mental status, significant modification of treatment, assessment of legitimacy of referral to hospital,
- increased suicidal thoughts or tendencies,
- The need to issue a referral to hospital or a health certificate requiring a thorough and comprehensive assessment of the health condition, e.g. a medical certificate to be attached to the application for disability benefits or to the application for disability status,
- the unambiguous wish of the patient and/or the patient's legal representative for in-patient treatment,
- Objective conditions on the part of the patient that prevent remote contact (lack of appropriate equipment for remote communication - in the case of persons qualified for the pilot program there is a possibility of renting it or the inability to use it, severe deficits in the area of cognitive functions, speech, vision, hearing, inability to ensure intimacy during remote contact - e.g. due to unavoidable presence of third persons during remote contact).

Individuals receiving treatment using telemedicine should attend an inpatient visit to the facility at least once every six months.

8.3 Cases in which a telephone consultation is sufficient

A telephone consultation is permissible when the patient's state of health is known to be stable, the consultation is of a nature corresponding to a control visit, only a prescription and/or a certificate (but not requiring a thorough assessment of the mental state, e.g. a certificate that the patient is under the care of the Mental Health Outpatient Clinic) needs to be issued.

During the teleconsultation, the doctor will assess the mental state of the patient and determine whether the teleconsultation is sufficient or whether another form of contact, such as a personal visit or a home visit, will be necessary.

8.4 Management of the patient with depression in the primary healthcare facility

It is recommended that GPs use screening tools to assess depressive symptoms and suicide risk.

Suggested screening tool for assessing depressive symptoms (attached):

- Patient Health Questionnaire-9 (PHQ-9) (Spitzer et al. 1999)

The PHQ-9 is a practical and easy-to-use self-report questionnaire for screening for depression. It contains 9 questions related to individual symptoms of depression included in the diagnostic criteria of DSM-IV and DSM-V classification. It has good psychometric properties. A validated Polish version is available (Kokoszka et al. 2016).

Proposed screening tool for suicide risk assessment (attached):

- The Columbia University Suicide Severity Rating Scale (C-SSRS) (Posner et al. 2011)

It is a simple and easy to use tool consisting of two parts defined as "suicidal thoughts" and "suicidal behaviour". Risk is assessed by the clinician based on 6 questions. The scale has good psychometric indices and documented predictive value. A Polish version is available and is currently undergoing validation in the Institute of Psychiatry and Neurology in Warsaw.

8.5 Consultation between a primary healthcare physician and a psychiatric specialist

For successful treatment of people with depressive disorders, collaboration between primary care and a specialist centre is desirable. At the pilot stage, the specialist centre should cooperate with at least one primary care centre. The primary care physician should be able to remotely consult with a psychiatric specialist. Such consultation is scheduled and can take place, if necessary, in the presence of the patient. When the consultation takes place without the presence of the patient, the use of a telephone call instead of a videoconference can be considered. During such a consultation, the primary care physician and the psychiatric specialist will together evaluate and, if necessary, modify the patient's pharmacotherapy and further treatment plan. After the consultation, depending on the outcome, the patient can continue the treatment by the family doctor, be referred to a specialist institution or stop the treatment.

The advantages of treatment by a primary care physician in consultation with a psychiatric specialist include: avoiding unnecessary travel to a specialist institution, improving the quality of treatment by using the knowledge and experience of the specialist, minimizing the risk of stigma associated with psychiatric treatment (Székely et al. 2017).

9. Legal guidelines for conducting video-consultation and rules for its documentation

9.1 Legal guidelines for conducting video-consultations

It should be noted that under the provisions of laws commonly in force (statute, regulation) binding legal guidelines have not been adopted on the principles of carrying out consultations in the field of psychiatry in the form of teleconsultation / videoconsultation. Such a possibility is provided for in Article 22.5 of the Act of 15 April 2011 on Health Care Activities (consolidated text, Journal of Laws of 2020, item 295, with amendments), under which the Minister responsible for health matters may determine, by way of regulation, the organisational standards of health care in selected areas of medicine or in specific entities performing health care activities, guided by the need to ensure adequate quality of health care services. Based on this provision, the Minister of Health has not yet issued an organizational standard for psychiatric teleconsultations. However, it should be noted that the Minister of Health, on the same legal basis, has established an organizational standard for teleconsultation in primary health care (Regulation of August 12, 2020 Journal of Laws of 2020, item 1395).

The Headquarters of the National Health Fund, on March 17, 2020, issued a communication allowing the possibility of performing and billing of guaranteed services provided in an outpatient setting under contracts for the provision of health care services in the type of psychiatric care and treatment of

addictions and the pilot program in mental health centres with the use of ICT systems, provided that the availability of personnel required for their implementation is ensured at the place of service provision.

It has been determined that the following codes for specific medical procedures apply when reporting remotely provided services:

- 89.0099 - medical advice via telehealth or communication systems,
- 94.471 - psychological consultation via ICT systems,
- 94.481 - psychotherapy session through ICT systems,
- 94.482 - visit by an addiction therapy instructor through ICT systems.

9.2 Rules of documenting video consultations

According to this communication, the provision of services via ICT systems should be recorded in the medical records by indicating the communication tool, while carrying out the sessions, the start and end time of the service should also be entered.

If the communication with the patient is based on the HIS system, a significant part of the process of documenting the provided services will be performed by this software (start/end date of the consultation, duration, issued recommendations, prescribed drugs).

In the absence of HIS software, the documentation process will be performed only manually (i.e. without partial automation).

10. User (medical staff and patient) training

Before implementing telemedicine services in the organization, training should be provided to the staff on how to use the devices and the system. There should also be prepared guidelines available in an online form (a short video showing the rules and the course of the call) and a manual for professionals and patients.

The planning and implementation of telemedicine solutions should involve the organization's management, IT staff, patient training staff, and medical professionals who will provide services.

The first step is to identify the training needs within the organization for the system that will be used for video consultations. In training employees who provide services and who conduct patient training, great importance should be given to privacy concerns.

In the planning stages of implementation, it is important to consider workload, which may discourage learning how to use new tools. Additionally, lack of time to attend training can be a barrier to implementing telemedicine solutions. The solution to this problem can be conducting individual trainings with professionals at convenient times and preparing guidelines available in paper and online forms, short training videos and a manual in two versions - an extended and a short one.

Be aware that patients may be reluctant to participate in training and to bring additional people into the therapeutic process, so when training professionals, prepare them for this situation, e.g., to discuss this issue with the patient in advance.

During training, point out to the professionals how important it is for them to be visible on camera during video consultations. This greatly improves communication with the patient.

5 Tips for Digital Encounters:

- Always test the technical connection before the meeting.
- Everyone should enter their name, which will be displayed and appear on the screen.
- The camera must be on at all times.
- Make sure that both sides can hear each other.
- For meetings lasting more than an hour, do not forget breaks, which are just as important as in live meetings (Arnstad 2021).

If possible, patients should be trained at the health care facility. The front desk staff member should instruct patients by introducing them to the use of the system for consultations using telemedicine. Patients can bring their own computer. A solution may be to record the training and make the video available to patients.

11. Ensuring a safe atmosphere during videoconsultation

Videoconsultation rooms should be designed to resemble therapy rooms, rather than traditional conference rooms. This helps to create an atmosphere in which the patient will feel at ease.

Both clinician and patient need to be in a place where they cannot be heard by others. During the session, the clinician and the patient should be in the room without anyone else present. To ensure that there are no other people in the room, the patient should provide a view of the entire room to the clinician/psychologist/psychotherapist prior to the consultation.

Issues to consider when arranging a space for telemedicine interactions:

- lighting - does daylight, artificial light give the right amount of light, does it blind the doctor/psychologist/psychotherapist - patient by distorting the video image, are there curtains in the room?
- Is there background noise? Is there an echo during the call? Can participants hear each other?
- Can computers be taken out of the room where telemedicine consultations are taking place, or are they assigned to that room only?

12. Supporting users (medical professionals and patient) in the service area

Handling and supporting users in the use of telemedicine devices is one of the main challenges in the implementation and use of video counselling. Especially if the institution goes beyond the framework of its own organization and its own information system and starts inter-institutional cooperation. The risk of failure of implementation of such solutions is the use of different information systems, quality of equipment, and skills of professionals and patients.

The risk of failure of implementing telemedicine services in an organization is the assumption that all technical issues will be solved by the technical staff. Before implementing a telemedicine system, roles in the organization must be separated so that at the implementation stage everyone knows what they are responsible for. This issue must be clarified thoroughly and in detail at the preparation stage.

In case of necessity, technical support must be immediate (provided face to face or by phone). Therefore, as a backup solution, it must be possible to establish a telephone connection between the medical professional and the patient.

The front desk clerk and medical professional should be trained by an IT staff member to be able to troubleshoot simple technical problems that occur with them or a patient. More serious problems

should be addressed by an IT professional. The health professional, during the first video session, should discuss the possibility of technical problems and how to resolve them.

If there are technical difficulties in joining the session, patients should be able to call a member of the facility staff to resolve problems with logging in or accessing the session. Medical professionals may also provide assistance in resolving problems to the best of their ability.

Both the front desk staff member and the medical professional at the medical facility should have access to an IT staff member to assist in resolving technical issues.

13. Safeguarding of consultation users

Data exchanged by means of video and audio during a video consultation in an established telemedicine model will, in principle, always qualify as "sensitive" data within the meaning of the GDPR - Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of physical persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation).

The establishment of a connection through which health services will be provided remotely (telemedicine psychiatric services), for these reasons, should only be made by a medical professional. The adopted solution can in no way, for technical and cyber security reasons, allow the patient to initiate the connection by himself, for example by sending a link to the conversation to the doctor. The patient in the adopted technical solution should expect to receive data (link, code, connection) from the medical professional or more broadly - the entity providing health services.

The adopted technical solution, due to the occurrence of delays or postponements of the dates of provision of services, should allow the patient, after receiving the data needed for the connection (link, code), to establish it, after which the patient will receive information about being in the virtual "waiting room", the estimated time of delay and the date of commencement of the delayed service.

If possible, it seems reasonable to implement two-factor authentication (2FA), which is inevitably becoming an increasingly common way to authenticate secure connections. In this approach, once a patient receives, for example, a link to a connection in an email message, the code necessary to validate the connection is sent via a second communication channel, such as an SMS message or a dial-up machine.

Every connection must be established and encrypted using a secure technical solution that guarantees compliance with the above legal standards (connection using https, TLS / DTLS protocol).

In particular, it is highly desirable that any of the tools used, due to the fact that sensitive data within the meaning of GDPR are sent in the wideconference mode, encrypt the connection with a number of difficult to break secure algorithms and cryptographic solutions, such as Double Ratchet Algorithm, Twofish, Curve25519, AES-256, HMAC-SHA256 etc. Due to the multitude of technical solutions in this area, it is impossible to propose a model solution. What is important is that an up-to-date solution is used and the implemented software can be developed (updated) in order to eliminate security gaps.

Implementation of the requirements contained in this study will provide protection against threats such as eavesdropping.

Analyzing international experience in this field, any technical solution chosen by a given healthcare provider:

- a) Must ensure the security of the processing of personal data, in particular, no patient identifiable data may be transmitted when the call is set up,

- b) Must allow the patient to join the teleconsultation from any tablet device, smartphone, personal computer, equipped with a microphone and camera and having access to broadband Internet, HTML5 compliant web browser (Chrome, Firefox, Opera, Safari) or other widely available applications installed on the device.
- c) Must be able to send a notification to the patient (or legal guardian) of an upcoming teleconsultation appointment via SMS or email. The notification should be sent at least one day before the video consultation.
- d) It must not allow anyone to join the teleconsultation that has been completed by the doctor.

The advantage of using a solution that enables video-counselling based on a healthcare institution's existing HIS system is that access to video-counselling in this system is not limited by a separate access policy, e.g. access to video-counselling in the system is available to all users who have access to videoconsultation in the system is granted to all users who have privileges to serve patients in units such as office, outpatient clinic, etc.

An additional layer of security is that in order to launch videoconsultation in the HIS system, it may be necessary to define the scope of services that can be provided using remote communication channels.

13.1 Place of providing services

In the case of health services provided via ICT systems or communication systems, the place of providing services is the place of residence of health professionals providing these services (e.g. 24.1.5 of the Act on Medical Activity). For safety reasons and in order to ensure high quality of rendered services, it is recommended that the place of rendering services is a mental health clinic or premises to which the medical entity has a legal title (e.g. premises rented for this purpose). It is not recommended that the place of providing these services be interpreted literally and directly as any place where a medical professional providing these services resides, e.g. the place of residence of a physician if it is not a registered medical practice and there is no dedicated office.

The healthcare provider, as legally responsible by virtue of the telehealth services provided, is generally not able to verify the conditions (e.g., as to privacy, confidentiality, lack of third-party involvement) that prevail in the premises outside its control.

During the session, it is crucial to avoid technical problems. It is very important to guarantee an adequate bandwidth, otherwise the connection may be disrupted or broken in the middle of the session. The (broadband) connection should be at least 4 Mb / s for both upload and download. Wi-Fi is usually not good enough for teleconsultation with video transmission, a wired connection is recommended.

14. Evaluating the quality of the treatment provided

The quality of the provided treatment is crucial for the success of the treatment process. One of the ways to ensure the quality is to monitor the work of the staff dealing with the patients, the doctors/psychologists/psychotherapists as well as the technical conditions related to the video-consultation.

Evaluation of the interactions carried out by the medical staff should take place after each visit during the first 6 months of treatment. After this time the evaluation of the quality of work of doctors/psychologists/psychotherapists can take place once every 6 months.

Evaluation of the technical aspects of the videoconsultation should take place after each completed session. This questionnaire should be completed by the patient and the healthcare professional. This will allow the facility offering the service to verify any technical issues that occur. The patient should receive an automatic e-mail with a link to the survey. The physician, on the other hand, should be able to assess the technical issues immediately after the call.

Please find attached sample questions for the evaluation of the quality of medical interventions and technical issues.

15. Benefits resulting from the implementation of video-consultation

There are a number of benefits resulting from the implementation of video consultations into the treatment offer available at the facility:

- The possibility of consultation for people who cannot appear at the facility due to geographical distance.
- The possibility of treatment for people for whom it is a barrier to come to the facility, because they are afraid of stigmatization.
- Reducing the amount of time patients have to spend traveling to the facility and waiting for a session.
- Providing access to due diligence services to patients who are opting out of traditional services due to fear of an epidemic situation.
- Reduced patient mobility between the patient's home <-> treatment facility, as well as within the treatment facility, which is beneficial in a difficult epidemic situation.
- The documented cost-effectiveness of ICT solutions (despite the expenses that are necessary in the initial phase, e.g. for the purchase of appropriate equipment).

16. Risks arising from the implementation of video-consultation

Dimension in which the risk fits in	Type of risk associated with the implementation of a given telemedicine model	Possible ways to limit
Organizational	Patients' reluctance to participate in video sessions.	<p>Videconsultation sessions should be a complement to what is offered in the medical facility (POZ and PZP). Some patients may be reluctant to participate in such visits. For them, the primary mode will remain a visit to the facility or a telephone consultation. It is important to emphasize, within the framework of the act introducing video consultations, that patients voluntarily use this form of providing health care.</p> <p>It may be sufficient to provide basic information about the way in which video-consultation is carried out, in order to overcome patients' reluctance. It may also be reasonable and useful to create a few short promotional/demonstration videos, showing an example of a videconsultation process.</p>
	Reluctance of medical professionals to conduct video consultations.	In an attempt to convince medical professionals who are reluctant to conduct video consultations, it may be useful to arrange a meeting with physicians or other medical professionals who have experience in conducting such sessions.
	Difficulties associated with training patients and medical professionals.	Some patients and medical professionals may not have the time to attend training. The solution is to prepare full and abbreviated guidelines as well as instructional videos. The materials can be sent electronically or given to the patient during a facility visit. A link to the video can be shared via email or text message.
Therapeutic	Using video consultations without in-person meetings may decrease the effectiveness of treatment.	Patients who receive video consultation sessions should attend an inpatient session once every six months.
	Lack of favourable conditions on the part of the patient for videconsultation (presence of outsiders in the room despite lack of consent from the patient).	The videconsultation should be discontinued until the patient has had an opportunity to have the session alone, if the statutory

		prerequisites for the participation of a relative in the provision of health care by videoconsultation have not been met. If a bystander is unwilling to leave the room the patient is in, the videoconsultation should be terminated with a recommendation that the patient report to a medical facility.
	It is more difficult to respond to emergencies, such as self-injurious or suicidal behaviour, during a video consultation than during an in-person visit	Patients should be carefully qualified for remote treatment. The use of screening tools can facilitate the identification of patients at high risk for threatening and suicidal behaviour. It is necessary to create detailed procedures for how to proceed if a clinician identifies a high risk of self-harm or suicide during a videoconsultation (prepared and easily accessible emergency phone numbers, phone numbers for ambulance and other services such as the police or fire department, established forms of contact with crisis intervention teams).
	Inability to reach the patient via video call, phone call or text message.	If the patient has not called, messaged or emailed to cancel the appointment, the front desk clerk at the facility should contact relatives (if possible) to verify the situation. If the patient has no family, emergency services should be contacted to verify the patient's condition. Alternatively, a mobile emergency team can be set up to deal with emergencies that may occur during a video consultation.
Facility management	Insufficient preparation of the facility for the implementation of telemedicine solutions.	Introduction of telemedicine solutions to a facility requires time and involvement of many groups of employees (e.g. IT department, reception desk, doctors, nurses). It is a process that requires good planning spread over time and preparation of the employees by training them well in advance. The introduction of videoconsultation cannot be sudden and surprise the employees.
Technical	No internet access.	symptoms, a telephone consultation may be conducted. When more severe symptoms are present, an in-office consultation is recommended.

		For those participating in the pilot, the purchase of SIM cards with Broadband Internet access may be considered.
	No smartphone or other electronic equipment available to conduct a video consultation session.	For patients who do not show an exacerbation of the disorder's symptoms, a telephone consultation may be conducted. If more severe symptoms are present, a face-to-face consultation in the office is recommended.
	Misplaced/lost smartphone.	The patient must visit the registration desk in person and provide a new phone number (if they change their phone number) or change their phone number using a secure login with a trusted profile
	Providing high-performance computer equipment for physicians/psychologists/psychotherapists generates costs.	Research shows that despite the expenses that are necessary in the initial phase, e.g. for the purchase of appropriate equipment, the use of solutions from the telemedicine area is more economically viable. For the units participating in the pilot program, the purchase of computer sets or laptops that meet the requirements provided by IT solution providers can be considered.
	Internet connection quality.	Provide a good quality connection to the Internet so that the link is able to support the audio and video connection. It is recommended that the bandwidth of the link be at least 4 mbps.
	Technical issues related to videoconsultation	The person conducting the videoconsultation reports problems to the facility staff member responsible for the technical infrastructure. In the case of patients who do not show an exacerbation of their symptoms, the consultation can be completed by a telephone call. If the session cannot be completed, another appointment should be scheduled.
	Inability to make a video call due to technical problems.	A medical professional initiates the telephone call. For patients who do not show an exacerbation of their symptoms, this form may be used instead of a video consultation. When more severe symptoms are

		present, an in-office consultation is recommended. It may also be useful to create a few short promotional/demonstration videos that show an example of a video consultation, possible technical problems and how to solve them.
Economical	Fees for video consultations are lower than for a standard consultation	When fees for video consultations are lower than for inpatient consultations, there is a risk that facility management will favour this type of arrangement. The key is to equalize fees so that financial considerations do not determine the choice of treatment form.
	Efforts by providers (medical facilities) to impose video consultations on patients as the preferred, desired form of health care delivery.	In the legal act introducing the standard of providing tele-treatment in psychiatry, the patient's right to receive health care services (counselling) in the form of a traditional personal visit should be guaranteed. It is desirable to include/present information during the process of registration for teleconsultation that the patient has the right at any time to resign from this form of medical service in favour of a stationary (personal) visit in the centre.
Security	Interception of transmitted video or audio by third parties, violation of privacy rights.	It should be ensured that the use of the videoconsultation mode is done only through tools that guarantee high security standards (built-in security, privilege levels, mandatory encryption of transmissions). Due to the high level of security and availability of HIS tools with 24/7 security teams, it is suggested to use built-in or optional teleconsultation modules built into the HIS. The advantage of this solution will be meeting the requirements relating to GDPR (no need to enter into additional contracts with external providers other than the HIS provider), obtaining the high security standards offered by HIS providers (instead of relying, for example, on internal server configuration by internal IT departments), and not having to invest a lot of money in

		own infrastructure needed for videoconsultations (providing high computing power and bandwidth rests with the HIS provider).
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17. Cost analysis*

Type of expense	Cost details	quantity	Cost Name	Cost per unit	Total cost
Project management and operation Project management costs may not exceed 10% of the total project value.	Management costs	24	Month	4000	96 000
	IT support costs	24	Month	6000	144 000
	Administrative and material costs	24	Month	2000	48 000
Computer hardware Purchase of equipment	Computer set for videoconsultation along with antivirus and	8	Set	6000	48 000

may constitute max. 37% of the project value	antispysware licenses for software					
	Purchase of a smartphone or tablet for a pilot participant	Assuming 5% of pilot participants do not have equipment (assumes 2000 pilot participants)	100	Unit	1000	100 000
	SIM card with internet access for the pilot participant	Estimated two-year cost for 5% of pilot participants (100 * 24 months * 30 zł)	2400	Number of intervention participants multiplied by number of months	30	72 000
	HIS software license, e.g. AMMS, to conduct video consultations	Annual license for one workstation 6000 PLN 2 years 12000 PLN, assuming for 8 workstations	8	License	12 000	96 000
		Monthly license for one workstation 350 zł. Assuming for 8 workstations for 24 months	192	Number of licenses multiplied by the number of months	350	67 200
Visits	Visit cost at POZ	Over 2 years, 500 people will be included in the pilot	2000	Visit	90	180 000
	Visit cost at PZP	Within 2 years, 1500 people will be covered by the pilot	17 000	Visit	105	1785000
	Cost of consultations between the POZ physician and the PZP	Within two years, 200 consultations will be carried out between the POZ physician and the PZP	240	Consultation	250	60 000
Training, prophylactic and	Training materials for medical professionals and patients	Set of training materials	1	Set	30 000	30 000

promotion activities	Website development	Preparation of a website for information and education activities	1	Service	10 000	10 000
	Project promotion conferences	Conduct two conferences at the beginning and end of the pilot project	2	Conference	50 000	100 000
Evaluation of the pilot at the patient and provider level	Process evaluation and outcome evaluation, using quantitative and qualitative methods	Preparing evaluation tools	1	Set	6000	6000
		Preparation of an electronic version of the questionnaires for the pilot and purchase of an annual subscription to the electronic data collection system	2	subscription	4000	8000
		Statistical calculations	100	Hour	100	10 000
		Research sample selection for qualitative research	60	Hour	80	4800
		Training of qualitative interviewers and focus group implementers	1	Training	1500	1500
		Implementation of 60 qualitative interviews and their transcription	60	Unit	500	30 000
		Implementation of 5 focus group discussions and their transcription	5	Unit	5000	25 000
		Qualitative data analysis	180	Hour	100	18 000
		Developing evaluation report	120	Hour	150	18 000
		The costs associated with	1	Lump sum	20 000	20 000

		handling the evaluation study are approximately 25% of the substantive costs				
TOTAL						2 977 500

*The above cost estimate is based on a cost analysis of past projects of similar scope. Final costs may vary slightly depending on changing market prices. Also, the final duration of project activities will depend on the date of signing the grant agreements.

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Attachments

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

1. Little interest or pleasure in doing things

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

2. Feeling down, depressed, or hopeless

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

3. Trouble falling or staying asleep, or sleeping too much

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

4. Feeling tired or having little Energy

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

5. Poor appetite or overeating

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

7. Trouble concentrating on things, such as reading the newspaper or watching television

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

9. Thoughts that you would be better off dead or of hurting yourself in some way

- Not at all (0 pts)
- Several days (1 pts)
- More than half the days (2 pts)
- Nearly Every day (3 pts)

10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all
- Somewhat Difficult
- Very Difficult
- Extremely difficult

Interpretation (sum of points scored in questions 1 - 9):

PHQ-9 Score	Severity of depression	Intervention indicated
0-4	No depression	Not needed
5-9	Mild	Repeat test at follow-up visit
10-14	Moderate depression	Make treatment plan, give advice, consider medication
15-19	Moderately severe	Give advice, prescribe medication

20-27	Severe	Prescribe medication, if response to treatment is inadequate immediately refer patient to psychiatrist
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THE COLUMBIA-SUICIDE SEVERITY RATING SCALE – C-SSRS

MEN'S VERSION

Questions		During the past month	
		Yes	No
Please ask questions 1 and 2.			
1.	<i><u>Did you wish you were dead or did you wish you could fall asleep and never wake up again?</u></i>		
2.	<i><u>Did you actually think about killing yourself?</u></i>		
If YES to question number 2, please ask questions 3, 4, 5, and 6. If NO to question number 2, please ask question 6.			
3.	<i><u>Have you thought about how you might do this?</u></i>		
4.	<i><u>Did you have such thoughts and were you going to act upon them?</u></i>		
5.	<i><u>Have you begun to develop or have you already developed the details of how to kill yourself? Do you intend to carry out this plan?</u></i>		
6.	<i><u>Have you ever done anything, started doing anything, or made preparations to take your own life?</u></i> <i><u>If YES, please ask:</u></i> <i><u>Was this within the last 3 months?</u></i>		

WOMEN'S VERSION

Questions		During the past month	
		Yes	No
Please ask questions 1 and 2.			
1.	<i><u>Did you wish you were dead or did you wish you could fall asleep and never wake up again?</u></i>		
2.	<i><u>Did you actually think about killing yourself?</u></i>		
If YES to question number 2, please ask questions 3, 4, 5, and 6. If NO to question number 2, please ask question 6.			
3.	<i><u>Have you thought about how you might do this?</u></i>		
4.	<i><u>Did you have such thoughts and were you going to act upon them?</u></i>		
5.	<i><u>Have you begun to develop or have you already developed the details of how to kill yourself? Do you intend to carry out this plan?</u></i>		

2.1 What influenced your assessment?

3. How would you rate the quality of the information provided (about diagnosis, disease symptoms, health assessment, or treatment)?

1	2	3	4	5	6	7	8	9	10
Very									Very
Bad									Good

3.1 What influenced your assessment?

4. How would you rate the engagement of the videoconsultant(s)?

1	2	3	4	5	6	7	8	9	10
Very									Very
Bad									Good

4.1 What influenced your assessment?

TECHNICAL EVALUATION SURVEY

1. Overall, how would you rate the technical quality of the video consultation?

1	2	3	4	5	6	7	8	9	10
Very									Very
Bad									Good

1.1 What influenced your assessment?

2. How would you rate the image quality of the consultation you conducted?

1	2	3	4	5	6	7	8	9	10
Very									Very
Bad									Good

2.1 What influenced your assessment?

3. How would you rate the sound quality during the consultation?

1	2	3	4	5	6	7	8	9	10
Very									Very
Bad									Good

3.1 What influenced your assessment?

4. Have you had any problems connecting with your doctor?

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

5. How long did you have to wait to be connected to a doctor?

Less than 5 mins	<input type="checkbox"/>
5 – 10 mins	<input type="checkbox"/>
10 15 mins	<input type="checkbox"/>
More than 15 mins	<input type="checkbox"/>

6. Were there any technical difficulties during the call?

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>