

A Work Project presented as part of the requirements for the Award of a Master's Degree in Management/ International Finance  
from Nova School of Business and Economics

## CONSULTING PROJECT WITH CUF:

### Enabling Care Integration through a Digital Ecosystem

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CUF



## 6. RECOMMENDATIONS

### 6.3. REMOTE CARE DELIVERY DIMENSION

HOSPITAL CUF CASCAIS



## CUF should focus on developing three building blocks of remote care, enabling patients to be a part of a hybrid, integrated physical and digital care journey

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | OVERVIEW

### DIGITAL CARE SERVICES

The epicentre of the healthcare ecosystem will comprise a set of medical services enabling remote care, ranging from self-diagnosis to video consultations with CUF professionals. Remote medical services will include different technologies to adequately mediate communication between CUF professionals and patients in different locations, enabling patients to (1) **navigate between digital and physical care touchpoints** with decreased friction and to (2) complete a fully **digital journey for primary care, according to preferences and clinical needs**.

#### SYMPTOM CHECKER



Symptom Checker applications use detailed algorithms that allow patients to input symptoms and receive potential diagnostic information.

#### CHAT W/ DOCTOR

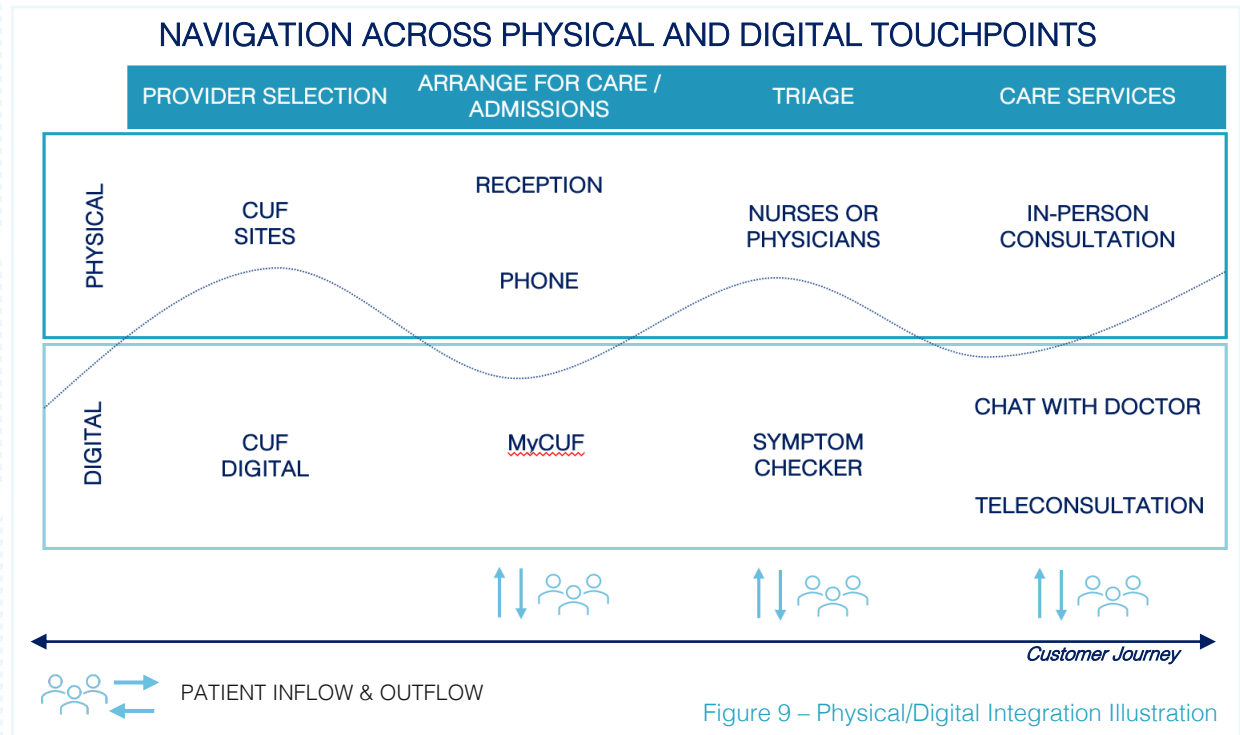


Chat with CUF certified physicians available in a wide variety of medicine areas to help patients understand how to proceed with self-treatment and avoid high-priced appointments.

#### TELE CONSULTATION



Virtual appointments for primary care, follow-up or urgent care, removing mobility, scheduling and transportation limitations



As a worldwide demanded health tool, the symptom checker is offered by all 3 main groups of care providers, differing in the channel of the offer and consequently in the type of symptom checker

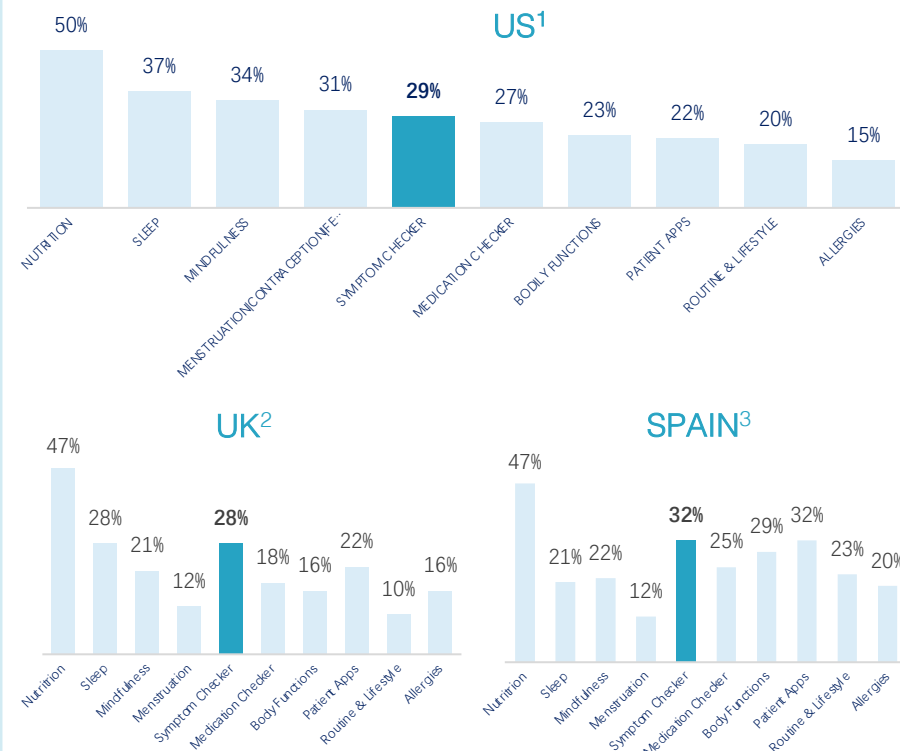
RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | SYMPTOM CHECKER

## SYMPTOM CHECKER | BEST PRACTICES

### STATISTICS

Graph 15 – Most Popular Types Of Health Apps Among Adults, 2020

(18-64 years respondents which spent money on health apps on downloads, subscriptions or in-app purchases)



### COMPANY

#### Traditional Healthcare Providers



#### Insurance Companies



#### Tech Platforms



The symptom checker is offered for **free** across each of the three types of health players.

### CHANNEL

#### AVAILABLE ON THE WEBSITE

- ✓ Standardized diagnosis process
- ✓ Tailored to symptoms
- ✓ **More informative** rather than a conversation
- ✓ **Predefined answers** based on each symptom
- ✓ Main Provider Traditional Care institutions

#### AVAILABLE ON THE APP

- ✓ 100% Digital
- ✓ **Personalized diagnosis process**
- ✓ Tailored to the patient
- ✓ **Interactive, adaptive**, back and forth conversation
- ✓ Main Provider: Tech Platforms

CUF should partner with a symptom checker app to facilitate patient self-diagnosis, while assisting CUF in the triage process, to optimize medical resources (I/II)

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | SYMPTOM CHECKER

## SYMPTOM CHECKER

### RATIONALE

**FACILITATE DIAGNOSIS & EFFICIENT RESOURCE MANAGEMENT** | This tool encourages patients in need of care to **seek assistance**, while reassuring individuals with non-emergent conditions to stay at home, reducing unnecessary medical appointments and preventing inadequate visits to emergency departments, saving money and time, allowing for an **efficiency** use of CUF's resources.

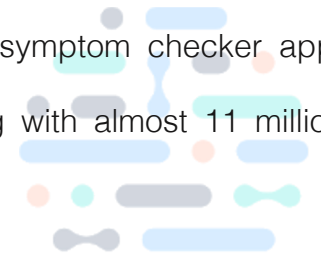
**COST EFFECTIVENESS** | Symptom checkers **automate** and streamline care processes, providing a cost effective complement to phone triage lines.

**PROMOTE PATIENT LOYALTY** | Initiating diagnosis with tools provided by CUF increases the chance of patients **continuing their care journey with CUF** when necessary and solidifies top of mind brand awareness for future visits. Also, an easy access to medical information increases patient satisfaction and perception of CUF as a trusted digital care provider.

### RECOMMENDATION

#### HYPOTHESIS 1 | PARTNERSHIP WITH ADA

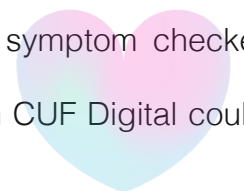
ADA is a global health company that operates an end-user symptom checker app, offering enterprise solutions in their portfolio as well, counting with almost 11 million users and over 22 million assessments.



**SYSTEM EFFECTIVENESS & CLINICAL ACCURACY** | Partnering with ADA would allow CUF to offer a high-quality symptom checker to its patients, given the company's system effectiveness, proven to be superior to that of its competitors in a 200 clinical scenario testing, 33% **more effective** than competition and almost as **secure** as GPs (97%)<sup>1</sup>.

#### HYPOTHESIS 2 | PARTNERSHIP WITH BABYLON

Babylon counts with 4.4 million<sup>2</sup> users due to its accessibility and symptom checker accuracy. Partnering with Babylon to integrate a symptom checker in CUF Digital could be a potential solution to improve self-diagnosis and triage.



CUF should partner with a symptom checker app to facilitate patient self-diagnosis, while assisting CUF in the triage process, to optimize medical resources (II/II)

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | SYMPTOM CHECKER

## RECOMMENDATION | CUF SYMPTOM CHECKER

### AT HOME

Patients log into MyCUF **anywhere and anytime** and use the tool to **assess possible causes of their symptoms** and recommended procedures, such as the need for treatment (consultation, teleconsultation, urgency, or medication)

**Note:** The tool applies to all cases, from non-urgent, common symptoms to more acute cases

### WAITING ROOM

While patients wait for their consultation, patients use the tool to **provide information of their symptoms**



**TREATMENT** | start self-treatment according to the diagnosis, when common, non acute illnesses

**TELECONSULTATION** | immediate and 24/7 available

**IN-PERSON APPOINTMENT** | the app sends the patient to the appointment scheduling tool

**RESORT TO CUF'S EMERGENCY UNITS** | the triage process is still undertaken at the unit







**IN-PERSON APPOINTMENT** | the doctor accesses the patient information prior to the consultation

Figure 10 – Symptom Checker Prototype

The offer terms and prices of the contact with care team feature depend on factors such as type of insurance, type of care, duration of doctor-patient relationship, tech platforms offer the service for free or on a pay-as-you go basis

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | CHAT WITH CARE TEAM

## CHAT WITH CARE TEAM | BEST PRACTICES

	<p><b>NEW HEALTH ISSUE</b> Via MyDoctor feature present on the main app patients get their questions addressed by <b>any doctor within 1 business day</b></p> <p><b>CHAT WITH SPECIFIC CARE GIVER</b> Via MyDoctor feature present on the main app patients get their questions addressed by <b>regular doctor within 3 business day</b></p>	<ul style="list-style-type: none"> <li>• \$0 – \$35 depending on insurance</li> </ul>
	<p><b>E-VISIT WITH DOCTOR</b> Patients who are enrolled in the app [MyUofMhealth] and who have <b>received care from Michigan Medicine for at least 2 years</b>, are allowed to request health care advice and treatment for <b>common and non-urgent medical conditions via the app</b></p>	<ul style="list-style-type: none"> <li>• Primary care – \$30</li> <li>• Specialty Care – \$30-\$100</li> </ul>
	<p><b>CHAT WITH SPECIFIC CARE GIVER</b> The patient can only send a message to doctors with whom they have established a <b>doctor-patient relationship for at least 1.5 years</b> via Stanford Health Care MyHealth app. Otherwise, the patient must <b>contact the clinic via other channels</b></p>	<ul style="list-style-type: none"> <li>• Free for patients with a medical record at SMC of +1,5 years</li> </ul>
	<p><b>CHAT WITH DOCTOR</b> It is an on-demand service, si patients may or not chat with their regular doctor. But medical history with Sanitas is available. <b>Via mySanitas App</b></p>	<ul style="list-style-type: none"> <li>• Free for existing Sanitas patients with insurance</li> </ul>
	<p><b>CHAT WITH DOCTOR [General &amp; Specialty]</b> <b>WRITTEN RESPONSE FROM DOCTOR [Non-urgencies]</b> The <b>patient cannot choose the doctor</b> addressing the matter</p>	<ul style="list-style-type: none"> <li>• Specialty – €2,90 for 72h access</li> <li>• General – free</li> </ul>
	<p><b>CHAT WITH DOCTOR</b> The patient submits their query on the website, having the possibility to <b>upload medical reports and images</b>, and <b>any doctor is assigned</b> to them. The service is delivered for free, being available 24/7</p>	<ul style="list-style-type: none"> <li>• Free</li> </ul>

Given a high degree of interest, a future implementation of the service should be considered, aiming to increase facilitated and immediate care access for patients and improved diagnosis accuracy

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | CHAT WITH CARE TEAM

## CHAT WITH CARE TEAM

### RATIONALE

**IMMEDIATE ACCESS** | A chat with a care team provides individuals looking for **immediate answers** to medical concerns a channel to interact with trusted healthcare professionals with no scheduling nor mobility limitations.

**COST EFFECTIVENESS** | Digital Touchpoint which eliminates the need to schedule consultations to address topics that can be clarified without an in-person visit, enabling patients to save on high-priced visits. A chat with care team is beneficial in terms of patient's and doctor's **time**, as well as of CUF's **resource allocation**.

**DIAGNOSIS ACCURACY** | Patients browsing the internet for self-treatment information are provided with a channel to interact with doctors from a trusted national healthcare provider, with no language barriers, allowing for **accurate diagnosis and improved clinical outcomes**.

### ADDITIONAL FINDINGS

**DEMAND WITH LOW WILLINGNESS TO PAY** | Individuals are extremely interested in a direct channel to contact with providers, however, extra willingness to pay is considerably low:

**HIGH DEGREE OF INTEREST** | People value a direct contact to doctor service: from 543 surveyed people, 489 (90%) interested in a direct contact to a doctor.<sup>1</sup>

**LITTLE OPENESS TO PAY** | Patients are less willing to pay for it: only 8% are willing to pay extra on top of their health plan/insurance for such service.<sup>1</sup>

**LOW OPENESS TO PROVIDE THE SERVICE<sup>2</sup>** | Many challenges can be identified in medical workflow management, imposing barriers to the implementation of a direct contact channel:

**SCHEDULE LIMITATIONS** | Doctors face extremely busy schedules, which difficult their ability to adequately answer a high number of question. In addition, patients require and pressure for **immediate responses**, which medical professionals cannot guarantee.

**INCENTIVE TO OVERCONTACT** | The availability of a direct service would create an incentive for patients to overcontact providers, which would be difficult to manage.

Following the best-practices from national and international peers, chat with the care team process was tailored to facilitate access to doctor-written responses, without excessively burdening medical staff during their schedules

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | CHAT WITH CARE TEAM

## RECOMMENDATION | CUF CHAT WITH CARE TEAM

- Chat with **CUF certified doctors** available in a wide variety of medicine areas to help patient **diagnose** non-urgent health issues, **save time**, get second opinions, understand how to proceed with **self-treatment** and avoid **high-priced appointments**, getting **doctor-written answers** in a few hours.
- This digital touchpoint would increase CUF's proximity to any patient, regardless of geographic limitations, and would centralize operations through an allocated team, instead of burdening doctor's workload in-between appointments.
- Doctors would be **allocated** according to **internal availability**, so patients would not be able to choose directly which doctor to chat to on a first contact basis, enabling CUF to efficiently manage resources without medical schedule overload.

### PROCESS FLOW | OVERVIEW

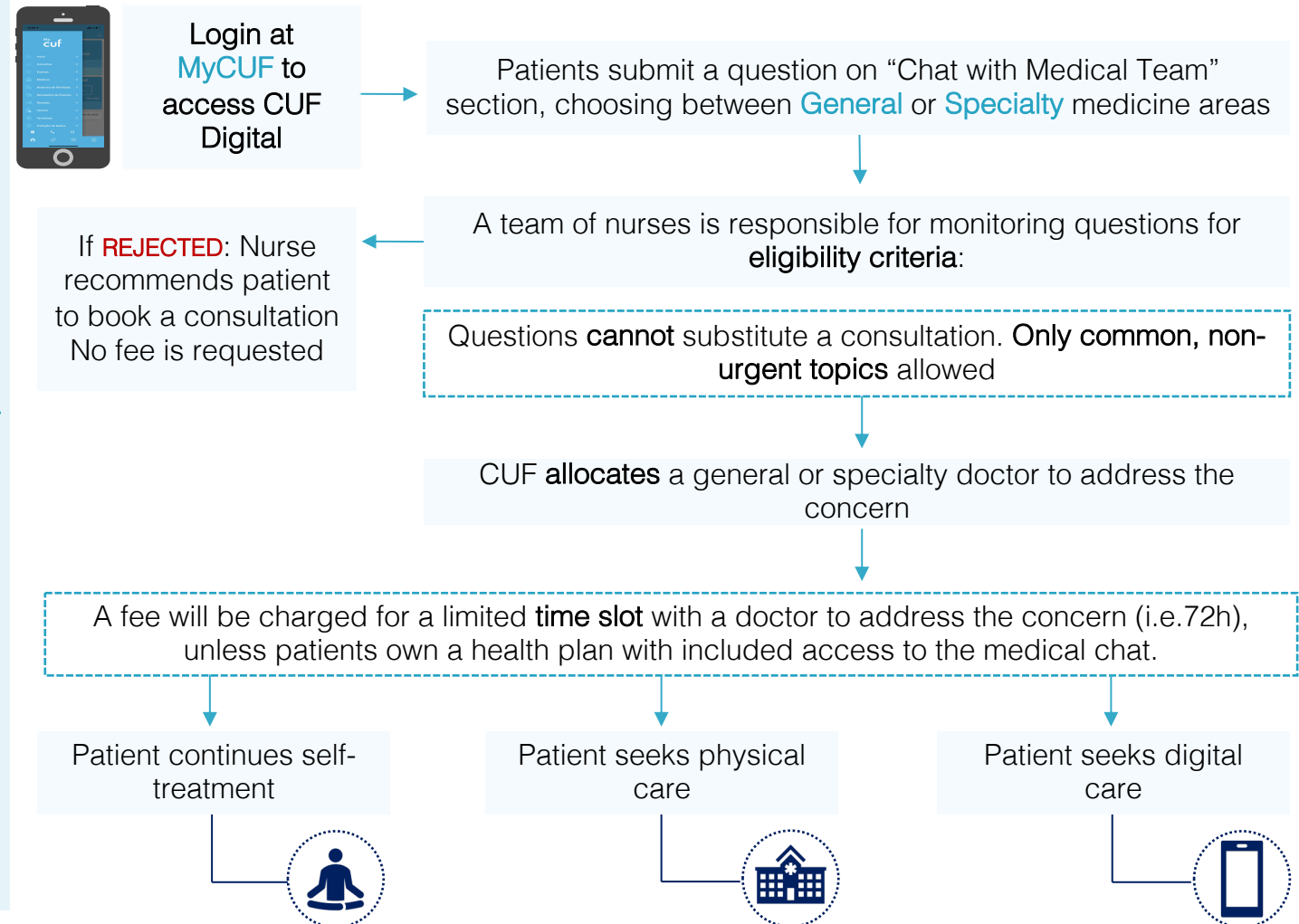







Figure 11 – Chat with doctor illustration

Teleconsultation prices offered by tech platforms differ according to factors as urgency, specialty, doctor; insurance companies make the service free for subscribers of specific plans; all providers offer the service via their main app

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | TELECONSULTATION

## TELECONSULTATION | BEST PRACTICES

	<p><b>URGENCY (AVAILABLE 24/7) APPOINTMENTS</b>  <b>SCHEDULED APPOINTMENTS:</b> for nonemergency concerns, patients can get a diagnosis or prescription online from a healthcare provider in about a 10-minute virtual visit  <b>Via MyDoctor feature present on the main app [Express Care ® Online]</b></p>	<ul style="list-style-type: none"> <li>• The <b>same as an in-person visit</b> with insurance</li> <li>• 55\$ without insurance (fixed price for on-demand visit)</li> </ul>
	<p><b>CLINIC-SCHEDULED VIDEO VISITS</b>  <b>SELF-SCHEDULED URGENT CARE VIDEO VISITS</b>  <b>Via MyUofMHealth patient portal or mobile app</b></p>	<ul style="list-style-type: none"> <li>• The <b>same as an in-person visit</b></li> </ul>
	<p><b>TELECONSULTATIONS</b>  <b>Via Allianz Saúde App</b></p>	<ul style="list-style-type: none"> <li>• <b>Free for subscribers</b> of any Allianz Health Insurance plan</li> </ul>
	<p><b>VIDEO CONSULTATION by appointment</b>  <b>VIDEO CONSULTATION immediate (in 24h)</b> [only available in Savia App]  <b>Both services offered via Savia App</b></p>	<ul style="list-style-type: none"> <li>• Teleconsultation by appointment: 9,90€</li> <li>• Teleconsultation in 24h: 16,90€</li> </ul>
	<p><b>URGENT CARE [VISIT NOW]</b>            Online board-certified doctors visits, 24/7  <b>BEHAVIORAL HEALTH [APPOINTMENT]</b>            Therapy + Psychiatry  <b>SPECIALTY CARE [VISIT NOW + APPOINTMENT]</b>  <b>HOSPITAL CARE [VISIT NOW]</b>            Pediatric Experts, Nurse Practitioners  <b>HEALTHY LIVING [VISIT NOW + APPOINTMENT]</b>            Breastfeeding Support, Nutrition &amp; Weight Loss</p>	<ul style="list-style-type: none"> <li>• Urgent Care visit: \$79 (66€)</li> <li>• Therapy Consultation: 99\$ (For a MSc degree Doctor) and 110\$ (Phd Doctor)</li> <li>• Psychiatry: 269\$ (225€) (Initial assessment) and 99\$ (Follow-up)</li> <li>• Breastfeeding Support: 129\$</li> <li>• Nutrition &amp; Weight Loss: 70\$</li> </ul>

By expanding and integrating “Teleconsulta do Dia” service into CUF Digital, CUF can provide remote video conferencing solutions for primary care, follow-up and urgent situations to be addressed in 24h

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | TELECONSULTATION

## TELECONSULTATION

### CURRENT SITUATION OVERVIEW

CUF launched the “Teleconsulta do Dia” service in march 2020 as a direct response to the COVID-19 pandemic, aiming to deliver care services to Portuguese patients in a safer way, avoiding physical contact when possible, delivering over 10,000 teleconsultations, with a success rate of 90%.<sup>1</sup>



General Practice and Family Teleconsultation



Internal Medicine Teleconsultation



Paediatrics Teleconsultation

1. Scheduling via website, phone line or MyCUF app

2. Teleconsultation via **Google Meets**

### RECOMMENDATION

- The main disruption introduced by CUF Digital into the existing Teleconsultation service is the **centralization of the patient journey** into one platform, with no fragmentation between the **digital channel** in which patients can book and meet with providers.
- Extension of teleconsultation service to more CUF health units: (1) Primary Care Teleconsultation (*implemented*) (2) Follow-up teleconsultation to monitor patient’s condition evolution, discuss exam results, etc. (*implemented*) and (3) Same-Day teleconsultation to address urgent matters (*non-implemented*)

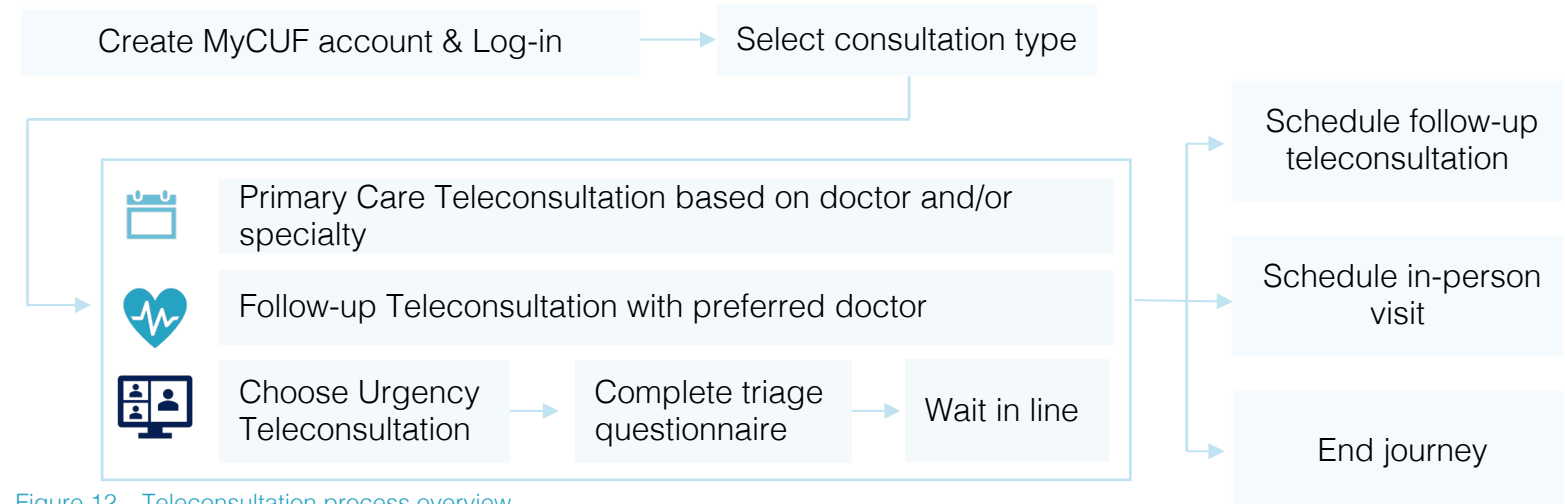


Figure 12 – Teleconsultation process overview

Despite the significant benefits introduced, there are important barriers to consider when implementing remote care services, such as potential clinical errors and patient data protection concerns

RECOMMENDATIONS | REMOTE CARE DELIVERY DIMENSION | CHAT WITH CARE TEAM

## REMOTE CARE DELIVERY | LIMITATIONS ON CARE DELIVERY

### SYMPTOM CHECKER



**CLINICAL ERRORS** | Symptom Checkers provide standard solutions to all patients on a “person like you” basis, which can harm initial clinical outcomes, given the diverse complexity of possible situations.<sup>1</sup> An **incorrect diagnosis** might delay urgent care, so this tool should be used as complement for diagnosis made by CUF doctors, not as an independent diagnosis tool.

**UNINFORMED PATIENT** | Not all users are adequately informed about the **medical terms** that are presented during the diagnosis, which can steer the process into an incorrect assessment. Moreover, patients might not be aware of the correct symptoms to report.

### CHAT WITH CARE TEAM



**INAPPROPRIATE UTILIZATION** | Patients might not be conscious on how to use the channel appropriately and send questions which require a deeper diagnosis of the situation or previous health history of the patient, requiring cases to be handled through a future visit.

**NO DIRECT CHANNEL FOR FOLLOW-UP** | The chat with care team increases provider proximity, but it is not a tool to follow-up on previous teleconsultations or to contact a specific doctor. It is not a CUF chat for all patients to address their doctor of choice.

### VIDEO CONSULTATIONS



**LACK OF PHYSICAL CONTACT** | The lack of physical contact constitutes a barrier for physical examination during teleconsultations, which can limit the accuracy of diagnosis and have consequent repercussions on the patient’s conditions.<sup>3</sup>

**TECHNICAL DIFFICULTIES & LACK OF TECH SAVVINESS** | Technical and communication constraints harm the quality and efficiency of the teleconsultation service, alongside the inadequacy of technology that some patient groups verify, that is, the lack of skills that makes them not comfortable when using virtual services.<sup>3</sup>

**DATA PROTECTION & SECURITY** | Patient-friendly telemedicine must ensure medical secrecy and protection of patient’s personal information, that being a complex requirement to achieve.<sup>4</sup>