

TeleCheck-AF for COVID-19

A European mHealth project to facilitate atrial fibrillation management through teleconsultation during COVID19

During the coronavirus 2019 (COVID-19) pandemic, traditional face-to-face consultations in atrial fibrillation (AF) outpatient clinics were rapidly transferred into teleconsultations, which were initially conducted without any information on heart rhythm or heart rate of the patients. To guarantee the continuity of comprehensive AF

management through teleconsultation during COVID-19, we developed a mobile health (mHealth) intervention at the Maastricht Medical University Centre to support AF teleconsultations: TeleCheck-AF.

TeleCheck-AF incorporates three important components: (i) a structured teleconsultation ('Tele'); (ii) an app-based on-demand heart

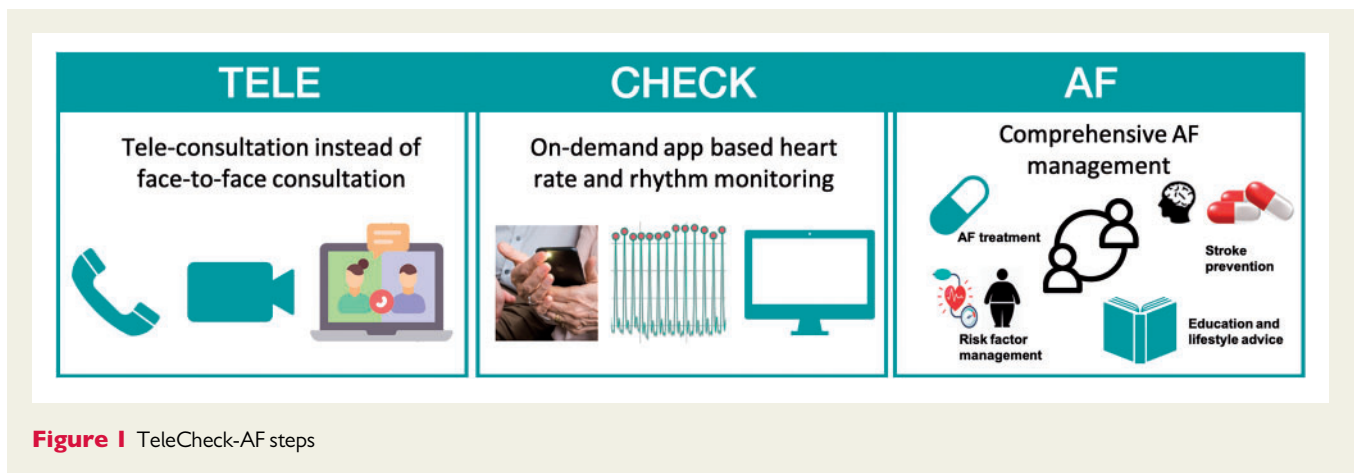


Figure 1 TeleCheck-AF steps

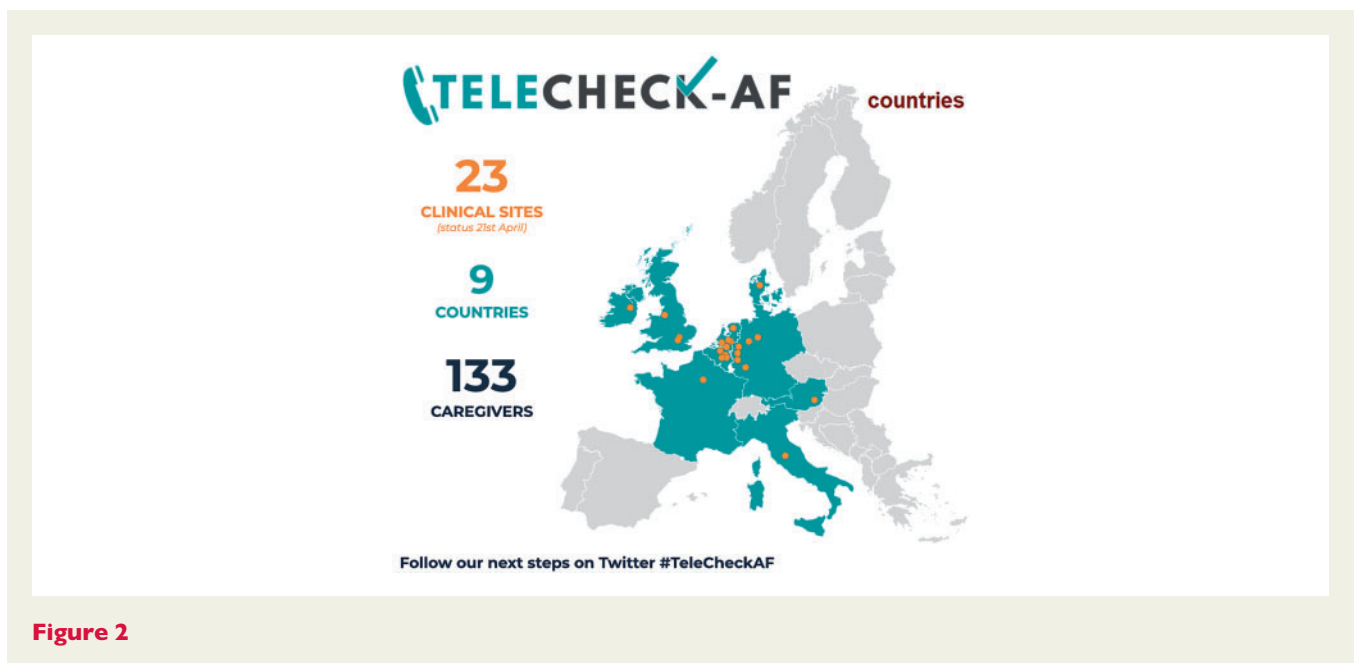


Figure 2

rate and rhythm monitoring infrastructure ('Check'); and (iii) comprehensive AF management ('AF'). The on-demand heart rate and rhythm monitoring infrastructure is based on a CE-marked mobile phone app (www.fibrichk.com) using photoplethysmography (PPG) technology through the built-in camera allowing semi-continuous heart rate and rhythm monitoring of AF patients prior to and during the teleconsultation.

A secretary acts as case coordinator and calls all patients scheduled for teleconsultations in the following week. The patients are instructed why and how to download the mobile phone app and to measure heart rate and rhythm three times per day and note any symptoms. An mHealth prescription (QR-code) activates the app and links the app to a secured cloud accessible by the treating physician. The submission of the recordings to the cloud stops when the prescription (7 days) expires. This on-demand mHealth approach enables the physicians to use heart rate and rhythm data for treatment decisions and prevents unnecessary data collection which would be associated with continuous long-term rhythm monitoring (e.g. wearables or CIEDs) which need to be managed afterwards. The TeleCheck-AF approach is summarized in *Figure 1*.

On 4 April 2020, we launched the TeleCheck-AF project (also featured on the ESC website: bit.ly/34R2F65), and we made the above-described TeleCheck-AF infrastructure available to numerous European centres, free of charge during COVID-19.

In the short term, the primary focus of the project is to maintain AF management while keeping patients out of hospital during COVID-19. Since the launch of the project, 23 European hospitals across nine countries have joined the project (*Figure 2*).

By 21 April 2020, 18 centres had started data collection and 402 AF outpatient patients had already been managed by the TeleCheck-AF

approach. We are currently developing surveys and plans to allow a detailed retrospective analysis of the safety and impact of the TeleCheck-AF approach on patient care during the COVID-19 pandemic.

We hereby would like to invite other centres to participate in TeleCheck-AF. To allow a quick set-up for centres interested in participating, we have developed a portfolio of resources, including patient instruction material and standard operating procedures to synchronize the interventions in the different centres. Centres can be initiated within 48 h after initial contact.

For more information, visit our website: www.TeleCheck-AF.com and follow #TeleCheckAF on Twitter.

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