

Apps and Online Platforms for Patients with Heart Failure

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Abstract

The use of the internet for health advice and information has burgeoned over recent years. This corresponds with an increasing number of people living with heart failure and, in the context of a greater focus on patient engagement, producing accurate online health information is becoming vitally important. To help meet this need, major cardiology societies have designed dedicated, patient-specific areas on their websites. This article aims to provide an overview of the patient information resources from three main professional societies: the European Society of Cardiology, American Heart Association and American College of Cardiology. A summary of the content of these dedicated websites and two smartphone apps is provided, along with a brief look into the future role of these technologies and resources in supporting both patients and their clinicians in the management of heart failure.

Keywords

Heart failure, European Society of Cardiology, American Heart Association, American College of Cardiology, patient resource, app, internet

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The internet has an all-encompassing influence in our professional and private lives, and a crucial part of this is information on matters relating to our health. The online search 'how to know chest pains are serious' increased by 8,781% between 2015 and 2018.¹ More than just acute presentations are being searched online. An analysis of 10 million cardiovascular disease (CVD)-related searches of the MayoClinic consumer health information portal showed that approximately 1.18 million of these searches related to living with and the control and management or cure of CVD.² Patient access to online health records is a topical issue, and a systematic review has found that this can positively impact on patient safety and patient convenience and satisfaction.³

In the UK, it is estimated that as many as 920,000 people have heart failure, and the incidence is rising.⁴ There are many support groups for these patients, such as the British Heart Foundation and Pumping Marvellous, and the major professional societies have designed dedicated patient-specific areas on their websites.^{5,6} The aim of this article is to provide an overview of online patient information resources from three main societies: the European Society of Cardiology (ESC), American Heart Association (AHA) and American College of Cardiology (ACC).

Websites

Table 1 provides a summary of the items available on each of the three main society platforms.

European Society of Cardiology

The Heart Failure Association of the ESC has an aptly named 'Heart Failure Matters' domain.⁷ With input from the multidisciplinary team

and promoted as an educational website available in multiple languages, it is quoted to attract 2.5 million visits a year.

A Journey Through the Website

The homepage sets the tone with images of (implied) patients of varying ages and ethnicities. Whether or not you use its virtual guide, clear distinct sections on the homepage take readers through the condition itself, videos from patients and a social media link. It is a comprehensive resource – various symptoms each have their own page with a stylised animated image with or without a short explanatory video. Topics that patients may find difficult to broach with their healthcare provider or would prefer to explore in the privacy of the online world are also tackled. For example, there are dedicated pages on the topic of sex and heart failure. It is worth noting that perhaps this section could have been further enhanced by taking the opportunity to showcase some real patient comments. In terms of mental health considerations, anxiety and depression are listed under 'other symptoms of heart failure', with a dedicated section on emotional health and heart failure openly discussing the matter.

The website continues with pages on common tests (with associated images on its echocardiogram page but not on its ECG one), a myth-busters section and information for caregivers. It also covers the growing entity of cardio-oncology and heart failure as well as talking through advanced heart failure therapies. Ultimately, this resource is very engaging for the user. For now it is not available as a smartphone or tablet app, although this would be a welcome transition for the layout used.

Table 1: Summary of Items Available on Each Online Platform

Item	ESC	AHA	ACC
Virtual guide to the website	√	x	x
Content available in other language(s)	√	√	√
Symptom guide	√	√	√
Support for advanced disease	√	√	√
Information on clinical trials	√	√	√
Link to support groups	√	√	√
Support for care givers	√	√	√
Downloadable content	√	√	√
Links to social media	√	√	√
Link to app	x	√	√
Introduces the MDT	√	x	√

ACC = American College of Cardiology; AHA = American Heart Association; ESC = European Society of Cardiology; MDT = multidisciplinary team.

American Heart Association

Under the 'Health Topics' section, the Heart Failure pages by the AHA make use of bold still images and white space.⁸ Right from the start, it defines various conditions and sets the user on their way to its other pages including support groups or red flag symptoms.

A Journey Through the Website

The website has a large, eye-catching search box on its homepage, almost calling users to search the site for what they want rather than walking them through the pages available. It is split into nine sections set out in a logical and structured manner. While the font styling is thin and unimposing with subheadings breaking up the page, it can at times be word heavy. Symptoms are discussed in the form of a table and the common investigations used in the diagnosis begin with a basic outline of procedure for the patient. This text is offset by elaborate and bespoke images and downloadable patient-engaging resources, making this a vibrant and interactive resource. The 'Shared Decision Making' section is set out in a question-and-answer-inspired layout that candidly discusses emotive matters including a 'Disagreeing with the Doctor' section. The final section, 'Personal Stories', features patients with heart failure, including the story of their diagnosis and the role of volunteer ambassadors, presenting a new avenue of empowerment for those with the diagnosis.

Unlike its European counterpart, the smartphone app is proudly on display, including glowing comments from reported users. Their platforms for users to share their thoughts and connect with others are prominent, and the ease by which one can share information through well-placed links to social media is welcome.

American College of Cardiology

The ACC offers CardioSmart.⁹ It is available in both English and Spanish, with a trim and neat appearance that is designed to lead the patient through the informative pages. It has quick links to related conditions sections and downloadable infographics prominently displayed.

A Journey Through the Website

At first glance, it has an eye-catching upper portion directing you to the various pages to explore. This is followed by an introduction to the condition that subtly guides you to the first in a series of pages starting with diagnosis right through to a section on clinical trials. At the bottom of the homepage is a 'Heart Failure News and Events' section. This is a

unique and helpful service to both patients and healthcare professionals and enticing titles provide an extensive source of engaging content.

This website views patient empowerment in a slightly different light than the other sites, entitling one section 'Your Responsibilities'. Instead of being a behemoth of knowledge, it supports patients by providing key questions they should ask their doctor. It appears less extensive than other sources when discussing the symptoms of heart failure; after listing them they are not taken much further forward in terms of details. The main investigations do have their own pages and are supplemented well with text and/or videos. For some of the more complex and significant decisions in heart failure management, for example ICD insertion, it has a useful online Decision Point tool, which allows patients to work through some key information and a series of questions to try and help them understand their choice. A printable version that can be used when discussing with the doctor is also available.

The site also tackles – in an honest and motivating manner – the pitfalls of sensational headlines about heart failure seen in the media. There is information on the latest advances as reviewed by a cardiologist and details of clinical trials including their stage of progress. In recognising the large teams of healthcare staff involved in managing chronic and at times complex conditions, it supports patients by having a dedicated section on the roles of the various healthcare professionals involved in the management of heart failure.

The site has inviting and easily accessible links to the many social media platforms. They even make available their logo and encourage readers to link their site with its own. A series of apps are advertised, although these are targeted at clinicians or for patient-clinician consultations.

Apps

Heart Failure Path (American Heart Association)

"A self-management tool that empowers heart failure patients to better manage and live with their condition."

This app is designed for patients and runs very much along the lines that would be expected. It supports patients by taking them through 12 different courses that aim to empower, with lifestyle choices, symptom tracking and treatment adherence. It also allows patients to connect with others, providing a new dimension to the well-known concept of patient groups.

CardioSmart Heart Explorer App (American College of Cardiology)

"Enhance the clinician–patient relationship at the point of care."

Available on a smartphone or tablet, the app offers high-resolution cardiac graphics and patient education animations. It is not designed to be a patient-only resource. Instead it aims to bring to life and help visualisation of issues discussed during a consultation, whether that be heart failure, MI or arrhythmias, such as AF.

The Future of Heart Failure Management

Online technologies are not simply a repository of knowledge. Artificial intelligence (AI) and deep learning are the next frontiers in cardiology and are already making headway in the realm of heart failure. Algorithms have been found to be helpful in predicting those who may develop heart failure based on electronic health records and research continues on how AI can be used to predict hospital readmission in these

patients.^{10,11} Wearable smart technologies – well known for their role in monitoring heart rate and physical exercise – are also developing rapidly, with novel innovations, such as wearable vests, to assess lung volume to prevent hospital readmission.¹²

The platforms described here each bring an individual approach and unique energy to the space for patients living with heart failure. From the comprehensive knowledge repository delivered by the ESC to the interactive downloadables of the AHA and the ACC illustrating all things heart failure, each resource has its own place on the stage. At a time

when online technologies are taking over as the primary mode of information retrieval, each resource can be used as a fountain of knowledge to help empower patients with information they can digest at their own pace. As clinicians, they can support us when tackling some of the most challenging topics with our patients, such as end-of-life issues in heart failure.

On the whole, we believe these resources need to be actively promoted. They have the power to morph the clinician–patient conversation into perhaps the purest form of the patient-centred care model. ■

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