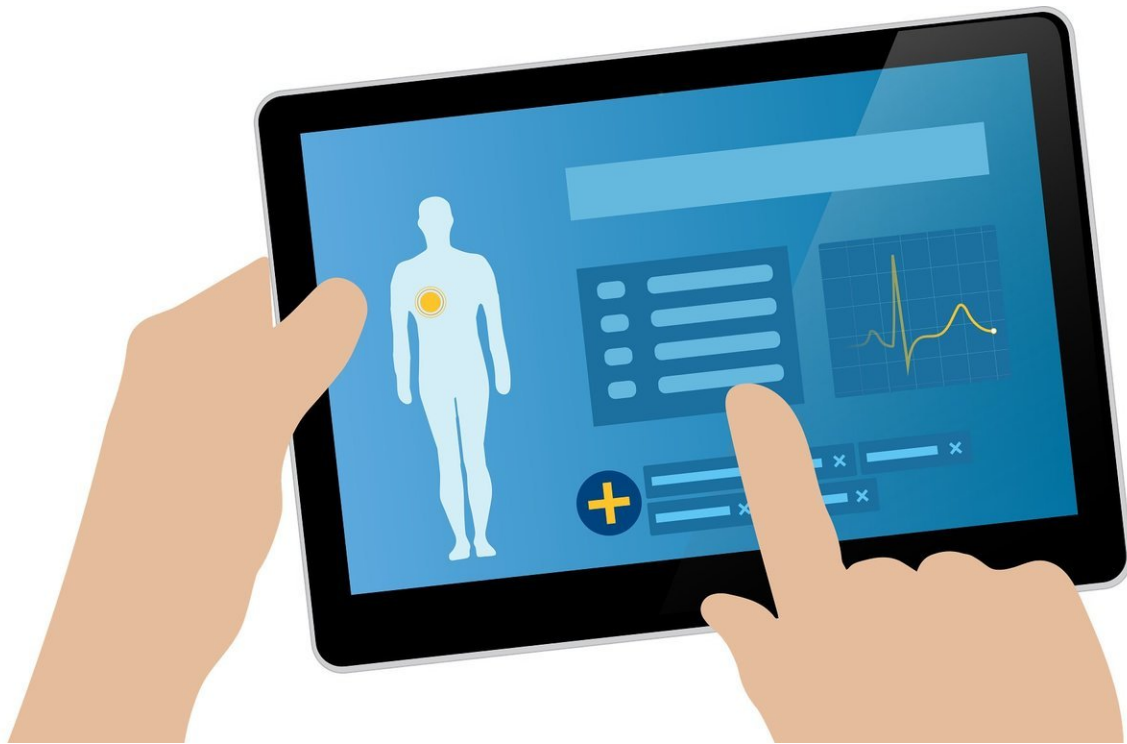# Use of clinical apps significantly improves quality of cardiovascular care

February 13 2019

Credit: CC0 Public Domain

A pilot program using several clinical decision support tools in the outpatient setting to treat and educate stable ischemic heart disease patients has shown success in improving angina in these patients. Findings from the Florida Cardiovascular Quality Network study were presented at the American College of Cardiology's Cardiovascular

Summit in Orlando. The conference brings together top experts to discuss and review innovative, relevant cardiovascular management and leadership strategies.

Stable ischemic heart disease (SIHD) is a form of coronary heart disease that causes recurring chest pain or discomfort—known as angina—when part of the heart does not receive enough blood. According to the researchers these patients typically have a complex medical presentation that requires the clinician to address a number of clinical factors. In stable angina patients, optimal cardiology care is achieved through compliance with SIHD guideline recommendations, including assessment of CV risk factors, quantitative scoring of angina symptomatology, documentation of appropriate use criteria (AUC) for diagnostic testing, as well as success rates in efforts to decrease CV risk factors.

"Clinical support tools—or apps—are becoming an integral part of routine clinical procedure," said lead study author A. Allen Seals, MD, FACC, a cardiologist with St. Vincent's Healthcare in Jacksonville, Florida. "These tools do not promote 'cookbook medicine' but quite the opposite. They assist the provider in individualizing the care of each patient to follow national cardiovascular care guidelines."

Using data from the Florida Cardiovascular Quality Network, researchers analyzed 254 patients who all had angina symptoms and presented for clinical evaluation. There were 188 patients in group A, in which all patients did not have pre-existing SIHD, and 66 patients in group B, in which all patients did have pre-existing SIHD. The overall patient population was 53 percent female and 47 percent male and had an average age of 64 years.

Use of Apps in the Clinic Setting

Three apps were used in the study: ACC FOCUS as a clinical decision support app for imaging AUC documentation, Seattle Angina Questionnaire app to determine symptom severity and quality of life, and the CardioSmart Heart Explorer App to educate patients.

The apps were provided to the care teams in tablet format after determining other mobile devices and/or laptop hardware were either too small or too big for ease of use in the clinic setting. The tablet was shared by the team, and each patient's data was securely entered. The data output from each app was available and shared as routine clinical information available on each patient. This protocol was repeated at each patient visit: baseline, 3 months, 6 months and 12 months. The specific apps chosen were consistent with the underlying SIHD diagnosis.

"The ACC and other stakeholders publish guidelines that represent comprehensive clinical documents that have established the standard for optimal cardiovascular care," Seals said. "Clinical decision support tools [apps] effectively translate these guidelines into a format that assists the provider with the integration of guideline-based diagnostic and treatment recommendations into clinical practice."

ACC FOCUS

The ACC FOCUS app was developed for use in the clinic and collected patient-specific information and applied software-based AUC to assist in determining the most appropriate functional study (stress test) for the individual patient. FOCUS has since been discontinued. Instead, the algorithms used are now available for licensing to clinical decision support mechanism (CDSM) vendors in order to provide institutions with more choices in how to meet the approaching federal AUC mandate start date on Jan. 1, 2020.

Clinic sites in the study used FOCUS for imaging AUC documentation.

Researchers found imaging AUC was appropriate 91 percent of the time, possibly appropriate 8 percent of the time and rarely appropriate 0.8 percent of the time.

Seattle Angina Questionnaire

The Seattle Angina Questionnaire is recognized as the most reliable, most reproducible and most clinically useful quantitative measurement of angina symptomatology and is the most commonly utilized clinical decision support tool for the determination of symptoms in SIHD patients. It utilizes a series of questions that are then reported on a five score system: summary score, angina severity, angina frequency, quality of life and physical limitation. All five Seattle Angina Questionnaire scores are quantified on a scale of 0-100 with 100 equivalent to an asymptomatic or highest quality of life score.

For the purposes of the study, a proprietary app was developed that presented the Seattle Angina Questionnaire in an electronic format that was easy for patient understanding and was readily adopted. At the baseline visit and the 12-month visit, patients' average Seattle Angina Questionnaire scores were as follows:

- Angina Frequency: 84 vs. 94
- Angina Severity: 70 vs. 81
- Quality of Life: 65 vs. 90

CardioSmart Heart Explorer

The ACC's CardioSmart Heart Explorer app is a highly interactive software designed as both a patient risk factor modification tool, as well as a resource for physicians and cardiac care team professionals. It is organized by heart conditions, heart drugs, heart treatments, heart basics

and healthy living. The healthy living tab has a large amount of basic and advanced information in a user-friendly format designed to enhance patient education, promote patient compliance and ultimately improve a patient's risk factor profile. The researchers also helped patients use the main CardioSmart website: CardioSmart.org.

Researchers found the CardioSmart Heart Explorer app assisted in effective risk factor medication in 81 percent of patients.

Apps in Practice and Going Forward

"Importantly, the utilization of multiple apps proved to be clinically feasible and did not overly impair efficiency of the team-based providers," Seals said. "In a team-based environment, patients should welcome the utilization of apps at the point of care and have confidence that these apps will have excellent value to their provider to improve the quality of cardiovascular care."

According to the Florida researchers, other key questions that need to be answered include whether structured use of apps at the point of care can be proven to impact quality of care in a larger patient population as well as in other disease states such as high cholesterol or atrial fibrillation. Also, it remains to be demonstrated that a systematic utilization of clinical decision support apps will positively impact long term outcomes such as decreasing hospitalizations and lowering mortality.

The Florida Cardiovascular Quality Network plans to expand the number of clinical sites and the number of team-based providers supported by this innovative method of bringing American College of Cardiology guidelines and clinical decision support tools to the point of patient care.

Provided by American College of Cardiology

Citation: Use of clinical apps significantly improves quality of cardiovascular care (2019, February 13) retrieved 26 April 2024 from https://medicalxpress.com/news/2019-02-clinical-apps-significantly-quality-cardiovascular.html