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The Coalition to Reduce Racial and Ethnic Disparities in Cardiovascular Disease Outcomes (*credo*)

Why *credo* Matters to Cardiologists

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This report reviews the rationale for the American College of Cardiology's Coalition to Reduce Racial and Ethnic Disparities in Cardiovascular Disease Outcomes (*credo*) and the tools that will be made available to cardiologists and others treating cardiovascular disease (CVD) to better meet the needs of their diverse patient populations. Even as the patient population with CVD grows increasingly diverse in terms of race, ethnicity, age, and sex, many cardiologists and other health care providers are unaware of the negative influence of disparate care on CVD outcomes and do not have the tools needed to improve care and outcomes for patients from different demographic and socioeconomic backgrounds. Reviewed published reports assessed the need for redressing CVD disparities and the evidence concerning interventions that can assist cardiology care providers in improving care and outcomes for diverse CVD patient populations. Evidence points to the effectiveness of performance measure-based quality improvement, provider cultural competency training, team-based care, and patient education as strategies to promote the elimination of disparate CVD care and in turn might lead to better outcomes. *credo* has launched several initiatives built on these evidence-based principles and will be expanding these tools along with research. *credo* will provide the CVD treatment community with greater awareness of disparities and tools to help close the gap in care and outcomes for all patient subpopulations.

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Abbreviations and Acronyms

ACC = American College of Cardiology

credo = Coalition to Reduce Racial and Ethnic Disparities in Cardiovascular Disease Outcomes

CVD = cardiovascular disease

QI = quality improvement

Racial and ethnic health disparities have become predominant concerns and are major issues in health care reform. As practitioners responsible for patients with the leading causes of death and disability in this country—heart diseases and stroke—our patients and the quality of care we provide are at the epicenter of disparate health. The background of this issue was well-established in the landmark Institute of Medicine report, Unequal Treatment (1), and has been further amplified through growing quality of care published data that now make it clear: apart from the biology of disease, the ecology, environment, and ethos of the health care experience drive outcomes (2–4). If we are to be successful in our quest to reduce the burden of heart disease and, moreover, if we are committed to providing the best care for all patients with and at risk of heart diseases, then we must be cognizant of health care disparities and take proactive steps to narrow and eventually eliminate gaps in care as a function of race and ethnicity as well as other factors such as sex and age.

In 2009, the American College of Cardiology (ACC) launched the Coalition to Reduce Racial and Ethnic Disparities in CV Outcomes (*credo*), an initiative that seeks to give cardiologists and other health care providers treating cardiovascular disease (CVD) the tools to examine disparities in their own practice and achieve a targeted reduction through performance measure-based quality improvement (QI) as well as provider and patient education efforts shown to be effective.

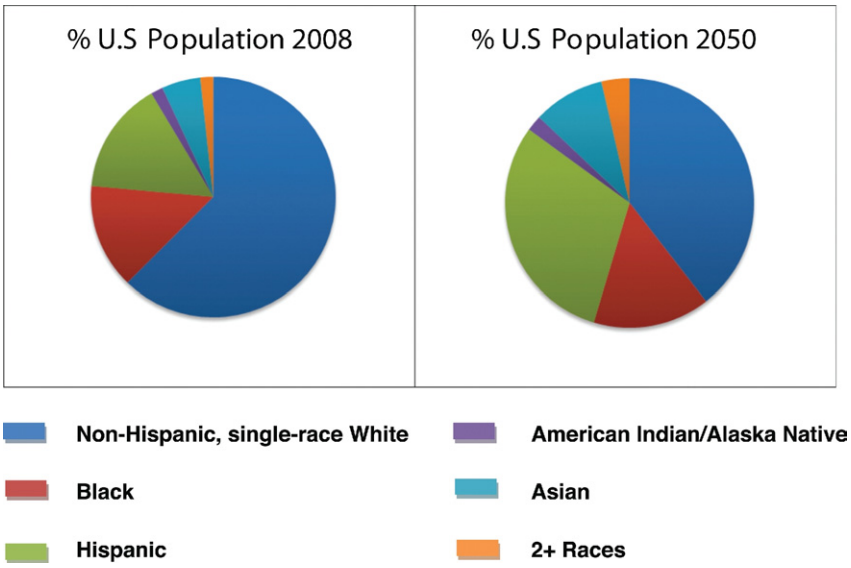
Rationale for *credo*

credo is not coming a moment too soon. Many if not most cardiology practices will see an increasingly diverse patient population, given demographics changes in the U.S. The U.S. Census Bureau projects that by 2042, non-Hispanic whites will no longer constitute the majority of the population (Fig. 1) (5,6). Hispanic and Latino populations will rise to an estimated 30% of the population, and African-American populations will rise to an estimated 15%. Nor is the growth limited to a few geographic regions. Asian- and Hispanic-origin populations are the fastest growing populations in every region of the U.S.

A recent survey of cardiologists showed that only an estimated one-third acknowledged the existence of racial and ethnic health care disparities, in general, with even fewer conceding such disparities in their own practice-settings or patients, a finding consistent with data from other health care providers (Fig. 2) (7,8). In addition, results from a 2008 national sample of physicians showed that although nearly 50% see cultural communication as a barrier to optimal care, adoption of approaches shown to be effective in improving this

Figure 1

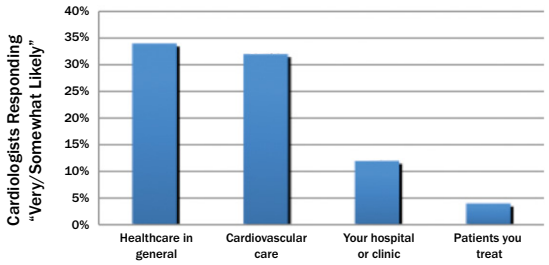
Distribution of U.S. Population Race and Ethnicity, 2008 and 2050



Analyses of U.S. Census data indicate that non-Hispanic, single-race White will become a minority of the population by mid-century. Data from the U.S. Census Bureau (6).

Figure 2

Web-Based Survey of Cardiologists: Do Clinically Similar Patients Receive Different Care Based on Race/Ethnicity?



Only one-third and <5% of surveyed cardiologists acknowledged racial and ethnic disparities in health care, generally, and among their own patients, specifically. Reprinted, with permission, from Laurie et al. (7).

communication is modest and uneven, with only 11.8% receiving quality of care reports broken down by race and ethnicity (9). Accordingly, a critical first step for *credo* is an awakening in our own field that disparate care is real; beyond this first step, it is the intention of *credo* to effectively communicate its rationale to practitioners at the front line of CVD prevention and treatment and to provide evidence-based tools to reduce disparities realistically in the context of today's rapidly changing health care system.

Evidence of CVD Disparities

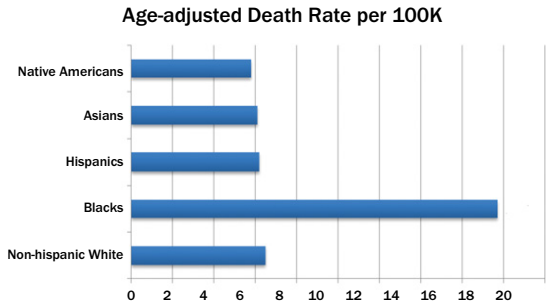
Many cohorts of people bear a disproportionate burden of disease and a resulting increase in mortality in the U.S. Cardiovascular disease is the leading contributor to this mortality differential, with African Americans 2 to 3 times more likely to die from heart disease compared with whites at any given age (10,11). Hypertension disproportionately affects blacks in the U.S., with the American Heart Association Heart Disease and Stroke Statistics 2010 Update concluding that "hypertension in blacks in the U.S. is among the highest in the world, and it is increasing" (11), present now in nearly one-half (44%) of African-American women and linked to an age-adjusted death-rate of nearly 3 times greater among blacks (Fig. 3) (12). The prevalence of hypertension alone is not an evidentiary base for disparate care. It is the evidence that people of color are far less likely to receive effective treatment and have less frequent access to newer and costly invasive procedures such as cardiac catheterization, percutaneous coronary intervention, coronary artery bypass graft, and implantation of defibrillators that brings the specter of disparate care sharply onto the radar screen (13–15). The race-based invasive procedure gap was confirmed again in a recently published study of patients undergoing percutaneous coronary intervention with stenting from 2003 to 2009 (16). Despite accounting for multiple variables, African Americans as well as individuals receiving Medicaid or without insurance were significantly less likely to receive a drug-eluting stent. In addition, although some disparities seem to be decreasing, recent increases also have been documented, with the latest annual National Healthcare Disparities Report finding that recommended in-hospital treatment of heart failure has gotten worse for Hispanic Americans, Native Americans, and Alaskan Natives since 2007 (17). Hispanic Americans with heart failure are younger, like African Americans, with higher hospital readmission rates, and they encounter multiple barriers due to socioeconomic, language, and cultural factors that translate into poorer outcomes (Fig. 4) (18).

Consider data from the CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes with Early Implementation of the ACC/American Heart Association Guidelines) Quality Improvement and NRMI (National Registry of Myocardial Infarction) registries. These data sources revealed racial and ethnic as well as sex-based differences in comorbidities, evidence-based therapies and procedures, and prolonged time to reperfusion (19). Adjusting for clinical and sociodemographic variables did not eliminate evidence of disparate outcomes. More recently, provocative data demonstrate that as a variable of hospital-based quality of care, certain markers of health care disparities can be eliminated (20). Both of these observations represent reasonable targets for intervention.

In 2007, the ACC NCDR (National Cardiovascular Data Registry) ACTION Registry-GWTG (Action Registry–

Figure 3

Hypertension Death Rates, 2006



African Americans have death rates from hypertension 3 times as high as other racial and ethnic groups. Data from U.S. Center for Disease Control and Prevention (12).

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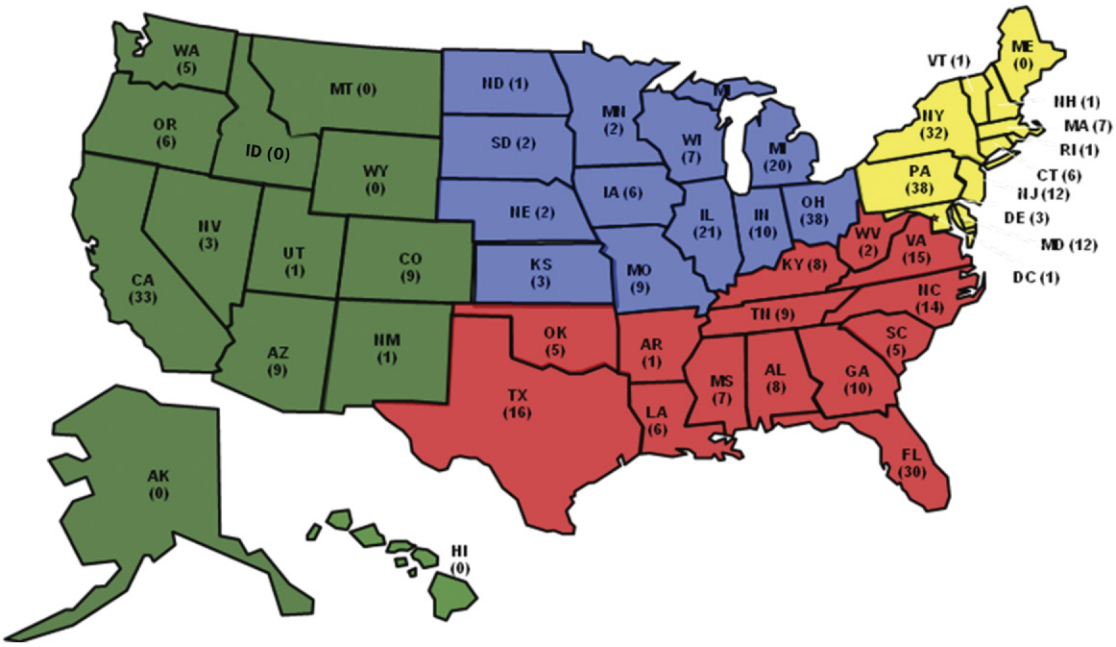
Figure 4

Distribution of ACTION Registry-GWTG Hospitals in 2008



In 2008, 268 hospitals in all 50 states, and four regions of the U.S. indicated by the different colors. contributed data for 52,707 patients with ST-segment elevation myocardial infarction and non–ST-segment elevation myocardial infarction, 8.3% African-American and 3.6% Hispanic patients. ACTION Registry-GWTG 2008.

Get With The Guidelines) emerged from the union of the CRUSADE, NRMI, and the GWTG registries, with a broad and national representation of hospitals permitting updated perspectives on disparities in care (Fig. 4). By 2008, although use of acute and discharge medications had largely been equalized between racial and ethnic groups, African American and Hispanic patients still had longer delays to reperfusion, with door-to-balloon times ≤90 min observed in 83% of white patients compared with 75% and 76% of black and Hispanic patients, respectively (Fig. 5). Similarly, registry data show that women remain less likely to receive reperfusion, have longer delays to reperfusion, and less frequently receive evidence-based antiplatelet therapy, on top of the longer delay to seeking treatment (21).

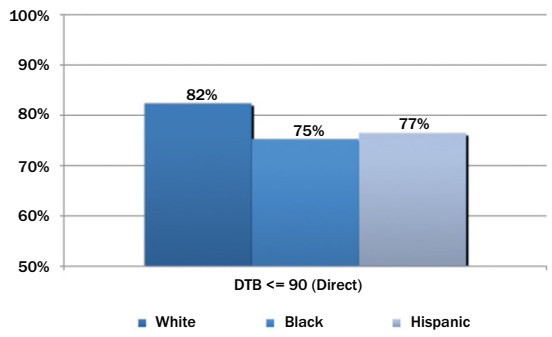
Differences in the longitudinal provision of guidelines-compliant care remain evident as well. Compared with white patients, blacks in the national, ambulatory PINNACLE (Practice Innovation and Clinical Excellence) registry were less likely to have consistently controlled blood pressures per the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (22) criteria (55% vs. 63%, $p < 0.001$) and low-density lipoprotein levels <100 g/dl (57% vs. 77%, $p < 0.001$). Similar results were seen in the NEPTUNE II (National Cholesterol Education Program Evaluation Project Utilizing Novel E-Technology) Survey, which observed that African-American patients were significantly less likely to achieve their low-density lipoprotein treatment goal compared with non-Hispanic white individuals (23–25).

Reducing Health Care Disparities: Evidence and Trends

Understanding the source of differences in care and outcomes between groups of patients can guide effective efforts to promote equity. For example, improving health care access, as occurs in Medicare and as expected with health care reform implementation, might reduce some racial and ethnic health care differences but is not solely sufficient to eliminate disparate care (26,27). By definition, differences in health outcomes that persist when access and patient clinical factors are controlled are defined as "disparities," reflecting institutional barriers; individual provider issues such as language barriers, cultural insensitivity, bias, or frank racism; and patient issues such as health literacy, cultural beliefs, adherence, and trust (Fig. 6) (1). These contributors to disparities point to the need for provider education, includ-

Figure 5

Delays to Reperfusion by Race and Ethnicity



African-American and Hispanic patients have longer delays to reperfusion, with door-to-balloon time (DTB) ≤90 min observed in 83% of white patients compared with 75% and 76% of black and Hispanic patients, respectively. ACTION Registry-GWTG 2008.

ing cultural competency training and data-based QI efforts, as well as patient education and support.

Analyses of published behavioral research data have pointed to effective approaches to reducing disparities. In studies across health care conditions, data show provider cultural competency training can improve health care quality, provider knowledge and attitudes, and patient satisfaction and health (28). Cultural competency has been defined as the ability of health care providers and systems "to provide care to patients with diverse values, beliefs and behaviors including tailoring delivery of care to meet patients' social, cultural, and linguistic needs. The ultimate goal is a health care system and workforce that can deliver the highest quality of care to every patient, regardless of race, ethnicity, cultural background, or English proficiency" (29). Cultural competency, in fact, shares many features with patient-centered care, both at the provider and system level, such as:

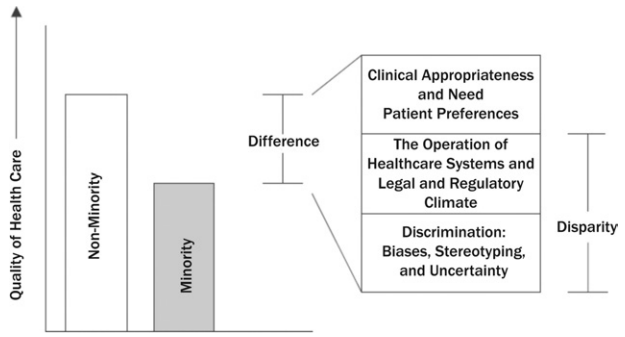
- Understanding the patient as a unique person;
- Exploration of and respect for patient beliefs, values, meaning of illness, preferences, and needs;
- Awareness of one's own biases and assumptions; and
- Provision of information and education tailored to patient level of understanding (30).

Beyond cultural competency training, performance-based physician education both in CVD and in health care overall has been shown to impact disparities. Systematic review by Davis et al. (31) of interventions to reduce disparities in CVD identified more than 60 tested interventions; data from these studies supported the value of registries, multidisciplinary teams, and community outreach. The Robert Wood Johnson Foundation-supported initiative Expecting Success found that a hospital-based QI effort based on tracking performance metrics in acute coronary syndromes and heart failure by race and ethnicity yielded overall improvement in quality (32). A recent analysis further supports the equity-promoting impact of such QI efforts. Data from the Quality Improvement Organization Inpatient Clinical Data Warehouse for the Centers for Medicare and Medicaid Services RHQDAPU (Reporting Hospital Quality Data for Annual Payment Update) program revealed improved door-to-balloon times among black patients treated at hospitals receiving race-specific performance feedback; many of these hospitals serve a higher proportion of black patients and thus experienced a significant overall reduction in door-to-balloon times (33). Similarly, for hospitals participating in the GWTG–Coronary Artery Disease registry who received quarterly performance feedback stratified by race, analysis of data concerning acute myocardial infarction treatment found that racial disparities diminished significantly between 2002 and 2007 (34).

The Robert Wood Johnson Foundation's national program Finding Answers has examined efforts to reduce disparities, concluding that, although provider training and QI efforts are critical pieces of the solution, health equity is achieved and sustained when such efforts are aligned with provider and system incentives, QI is culturally tailored, and nurse-led education and community connection is incorporated (35). Many issues require consideration beyond registry participation, as noted in an editorial by Cook (36), including the true impact of the recorded changes and

Figure 6

Differences and Disparities in Health Care Quality



Health differences among diverse populations reflect multiple factors, whereas health care disparities refer to differences that are not due to access-related factors, clinical needs, patient preferences, or the appropriateness of the intervention. Reprinted, with permission, from the Institute of Medicine, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care (1).

generalizability to hospitals that do not enroll in such QI efforts. Notably, these recommendations dovetail with the ACC Workforce Task Force recommendations and the American Heart Association tenets for health care reform (37,38), calling for expanded cultural competency training beyond just physicians and nurses, and use of information technology platforms that efficiently incorporate tools to minimize disparate care in cardiology practices and form the basis of evidence-based QI efforts.

Other trends align with *credo*'s goal of assisting clinicians to better treat their diverse patient populations with CVD. For example, for nearly 10 years, health care organizations receiving federal funding have been required to provide culturally and linguistically appropriate services (39). Six states have passed legislation requiring (New Jersey, California, Washington, New Mexico, and Connecticut) or strongly recommending (Maryland) cultural competency training, with several other states considering the measure (40). National accreditors of health care organizations similarly are moving to measure and recognize efforts to reduce disparities in health care. The Joint Commission, which accredits and certifies more than 18,000 health care organizations in the U.S., is beginning evaluation of patient-centered communication standards in January 2011, including:

- Identification of the oral/written communication needs of the patient;
- Assessment of qualifications for interpreters and translators;
- The inclusion of race, ethnicity, and preferred language in patient records;
- Prohibition against discrimination based on age, race, ethnicity, religion, culture, language, physical or mental disability, socioeconomic status, sex, sexual orientation, and sex identity or expression;
- Allowance of appropriate family/friend presence/support; and
- Provision of interpreter/translation services (41).

Clearly, these standards influence both provider practices as well as patient education practices. Similarly, the National Committee for Quality Assurance, which accredits and certifies health plans and recognizes physician performance in specific disease areas, is implementing a program for recognizing distinction in multicultural health care, on the basis of standards developed from their own awards program as well as from the National Quality Forum, Office of Minority Health, National Institutes of Health, and federal and state regulations (42). Standards include:

- The accurate collection of race/ethnicity and language need data;
- The provision of written and spoken language services;
- The maintenance of a practitioner network that meets the needs of eligible individuals;
- The development of a written plan with goals annually evaluating how well the needs of diverse patient populations are met; and
- The use of data to evaluate and improve health care disparities.

Role of *credo*

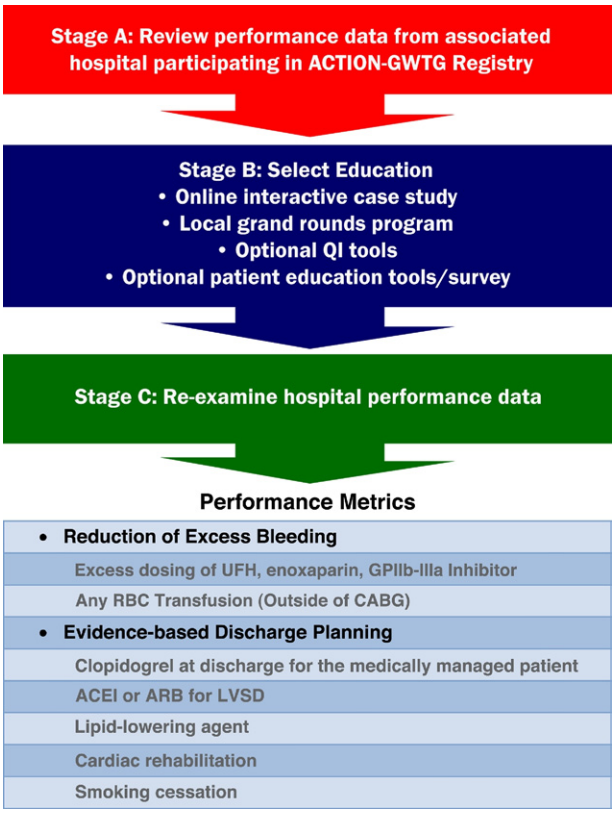
The principle goal of *credo* is to provide ACC cardiologists and cardiac care associates as well as other clinicians who treat patients with CVD evidence-based tools and information that can help them better meet the needs of their diverse patient populations and reduce racial and ethnic as well as sex- and age-based disparities. Approaches will range from performance improvement educational activities involving registry data to cultural competency training and patient education tools, as the evidence supports. Online and live educational programs and materials will either be identified or developed to fill an unmet need and made available.

Several activities have already been launched, including a major performance improvement-continuing medical education initiative—Keeping PACE: Patient-Centered ACS Care Education. Keeping PACE permits clinicians associated with ACTION Registry-GWTG hospitals to examine data online for various in-hospital and discharge performance measures, such as excess dosing of anticoagulants, use of dual antiplatelet therapy for the medically managed acute coronary syndromes patient, and cardiac rehabilitation referral (Fig. 7). Participating hospitals are encouraged to review their own trends in overall performance as well as performance data stratified by race and sex. Many online tools are then made available to target specific performance measure gaps, including educational case studies, QI tools, and patient education tools (36). A live educational program is then conducted with physician (including cardiologists, emergency medicine physicians, hospitalists) and nonphysician providers (nurses, catheterization laboratory technicians, emergency medicine transport services, pharmacists) as well as hospital QI personnel and administrators, to provide cultural competency training and tailor strategies designed to improve hospital performance and reduce disparities in care delivery. A re-examination of performance data occurs after a period of practice change based on the educational activity. The program incentivizes provider participation by affording physicians and nurses continuing medical education/continuing nursing education credits and part IV Maintenance of Certification credits.

Beyond the live provider educational program, *credo* also developed and incorporated into Keeping PACE a patient education video that addresses patient-level barriers to

Figure 7

Overview of Keeping PACE



This performance improvement Continuing Medical Education program offers clinicians an opportunity to target education and quality improvement (QI) to gaps in specific acute coronary syndromes performance metrics (Online Video 1). ACEI = angiotensin-converting enzyme inhibitor; ARB = angiotensin-receptor blocker; CABG = coronary artery bypass grafting; GP = glycoprotein; LVSD = left ventricular systolic dysfunction; RBC = red blood cell; UFH = unfractionated heparin.

broad use of cardiac rehabilitation. Significant gaps in cardiac rehabilitation referral and use have been observed among women and racial and ethnic minorities (43–45) (Online Video 1). A second video in Spanish is under development, because Spanish-speaking patients from various cultural backgrounds often resist cardiac rehabilitation (45). In this way, Keeping PACE is combining all of the elements shown to promote health equity: data-based QI coupled with provider and patient education.

In addition to de novo educational activities and materials, *credo*, recognizing the many efforts underway to redress disparities, will serve as a clearinghouse for evidence-based tools and materials that can help the cardiology community better treat their diverse patient populations. The efforts of the *credo* initiative will extend to research as well to further understand the impact of QI and educational tools on reducing disparities in CVD. Mindful that the strength of race and ethnicity registry data depends on accurate data collection approaches, *credo* has partnered with the Health Research and Educational Trust to assist ACC registry hospitals and practices with better collection of these data (46).

Although the cardiology community has the ability to reduce racial, ethnic, and sex-based disparities, it must be acknowledged that further research is necessary to fully understand the disease processes and optimal treatment for special populations—especially those who often have been underrepresented in clinical research. Recent reviews have noted the lack of data concerning the optimal treatment of older patients, women, and Hispanic and Asian subgroups, for example (47–49). Registries themselves, which are powerful tools for ascertaining practice patterns and disparities, must be sure to better reach into practices and hospitals that serve ethnically and racially diverse populations.

Conclusions

In summary, *credo* seeks to support the cardiology community in meeting the needs of an increasingly diverse patient population through evidence-based tools involving performance improvement data, provider education including cultural competency training, and patient education approaches. The ultimate goal is the provision of equitable care and outcomes for all patients, regardless of race, ethnicity, sex, and age.

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Key Words: cultural competency ■ health disparities ■ quality improvement ■ registries.

APPENDIX

For a supplementary video and its legend and a *credo* Advisory Group listing, please see the online version of this article.