Journal of the American College of Cardiology
© 2013 by the American College of Cardiology Foundation
Published by Elsevier Inc.

Vol. 62, No. 21, 2013
ISSN 0735-1097/$36.00
http://dx.doi.org/10.1016/j.jacc.2013.05.099

SPECIAL ARTICLE

Cardiovascular Care Facts

A Report From the National Cardiovascular Data Registry: 2011

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Objectives The aim of this report was to characterize the patients, participating centers, and measures of quality of care and outcomes for 5 NCDR (National Cardiovascular Data Registry) programs: 1) ACTION (Acute Coronary Treatment and Intervention Outcomes Network) Registry–GWTG (Get With The Guidelines) for acute coronary syndromes; 2) CathPCI Registry for coronary angiography and percutaneous coronary intervention; 3) CARE (Carotid Artery Revascularization and Endarterectomy) Registry for carotid revascularization; 4) ICD Registry for implantable cardioverter defibrillators; and the 5) PINNACLE (Practice INNovation And CLinical Excellence) Registry for outpatients with cardiovascular disease (CVD).

Background CVD is a leading cause of death and disability in the United States. The quality of care for patients with CVD is suboptimal. National registry programs, such as NCDR, permit assessments of the quality of care and outcomes for broad populations of patients with CVD.

Methods For the year 2011, we assessed for each of the 5 NCDR programs: 1) demographic and clinical characteristics of enrolled patients; 2) key characteristics of participating centers; 3) measures of processes of care; and 4) patient outcomes. For selected variables, we assessed trends over time.

Results In 2011 ACTION Registry–GWTG enrolled 119,967 patients in 567 hospitals; CathPCI enrolled 632,557 patients in 1,337 hospitals; CARE enrolled 4,934 patients in 130 hospitals; ICD enrolled 139,991 patients in 1,435 hospitals; and PINNACLE enrolled 249,198 patients (1,436,328 individual encounters) in 74 practices (1,222 individual providers). Data on performance metrics and outcomes, in some cases risk-adjusted with validated NCDR models, are presented.

Conclusions The NCDR provides a unique opportunity to understand the characteristics of large populations of patients with CVD, the centers that provide their care, quality of care provided, and important patient outcomes. (J Am Coll Cardiol 2013;62:1931–47) © 2013 by the American College of Cardiology Foundation

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Abbreviations and Acronyms

AMI = acute myocardial infarction

CAS = carotid artery stenting

CMS = Centers for Medicaid and Medicare Services

ICD = implantable cardioverter defibrillator

PCI = percutaneous coronary intervention

The NCDR (National Cardiovascular Data Registry) comprises 7 distinct quality measurement and improvement programs developed by the American College of Cardiology Foundation (ACCF), often in collaboration with partner organizations. The mission of the NCDR is to improve the quality of cardiovascular patient care by measuring adherence to performance metrics, providing direct feedback to participating sites together with knowledge and tools to improve performance; implementing quality initiatives; and supporting research that improves patient care and outcomes. The primary aim of the registries is to optimize the management and outcomes of patients with cardiovascular disease by collecting and reporting data to improve the quality and safety of care through the provision of risk-adjusted outcomes for benchmarking and novel quality improvement methods. The first NCDR program, the CathPCI Registry, was launched in 1998 and has collected detailed clinical information on nearly 10 million coronary angiography and percutaneous coronary intervention (PCI) procedures performed in the United States (1). The NCDR has subsequently expanded to include 6 additional registries across the spectrum of cardiovascular disease.

The process for developing the core registry datasets follows an established methodology for creating and implementing specific data standards. Committees of experts from multiple disciplines, reflecting both quality improvement and research priorities, identify key data elements and metrics to assess the quality of care for a specified patient population. These data elements and definitions are then subjected to review and iterative refinement, which includes a ranking process, a public comment period, and alpha and beta site review to establish feasibility, until consensus is reached on the final data elements and definitions. Upon completion of the final dataset and data dictionary, a data collection form is designed and tested. Datasets are regularly revised to reflect current clinical practice and ongoing scientific relevance. Data are collected by participants for entry into central data repositories maintained by the ACCF. The NCDR applies a comprehensive data quality program to enhance the validity and reliability of registry data (2). Key performance metrics are supplied to all participants on a quarterly basis accompanied by an explanation of the benchmarking methodology used to facilitate comparison of the outcomes of one institution with results nationally.

The objective of this report is to provide a description and overview of the patient populations, participating centers, and patterns of care from the 5 NCDR registries for which comprehensive data from 2011 are available. Two recently initiated registries (Improving Pediatric and Adult Congenital Treatment, and the Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapy Registries) are not included. This report primarily focuses on data from 2011, while also illustrating temporal trends in some patient and care characteristics. Where available, the report highlights similar data elements and outcomes across the registries.

The NCDR ACTION Registry–GWTG

The ACTION (Acute Coronary Treatment and Intervention Outcomes Network) Registry–GWTG (Get With The Guidelines) is sponsored by the ACCF in conjunction with the American Heart Association, with partnering support from the Society of Cardiovascular Patient Care, The American College of Emergency Physicians, and The Society of Hospital Medicine (3). The ACTION Registry–GWTG was designed to assess the characteristics, treatments, and outcomes of acute myocardial infarction (AMI) patients (either ST-segment elevation myocardial infarction or non–ST-segment elevation myocardial infarction). Eligible patients are those older than 18 years of age hospitalized with a diagnosis of AMI who have acute ischemic symptoms within 24 h of presentation. Patients admitted for other conditions who subsequently develop AMI during hospital stay are not included (Figs. 1 to 6, Tables 1 to 6).

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and Medicare Services to develop and maintain quality measures, reports stock holding in Medtronic, and has received research funding from Boston Scientific. Dr. De Lemos receives grant support from Roche Diagnostics and Abbott Diagnostics; consulting fees from Janssen Pharmaceuticals; and honoraria from Astra Zeneca and BMS. Dr. Fonarow receives research support from the Agency for Healthcare Research and Quality; serves as a consultant for Novartis, Medtronic, and Gambro; and has served as unpaid Chair of the ACTION Registry-GWTG Steering Committee. Dr. Kremers has equity >$10K in Boston Scientific; provides consulting for Medtronic; is a member of the Speakers' bureau for Boston Scientific; and is an investigator for St. Jude Medical, Medtronic, Boston Scientific, and Cameron Health. Dr. Messenger is Chair of the CathPCI Registry Research and Publication Committee. Dr. Moussa is an investigator on research protocols sponsored by Medtronic, Gilead, Baxter, and Terumo. Dr. Roe has received research funding from Eli Lilly, Revalesio, Sanofi-Aventis, American College of Cardiology, American Heart Association; and consulting fees or honoraria from AstraZeneca, Sanofi-Aventis, Janssen Pharmaceuticals, Merck, Regeneron, and Daiichi-Sankyo. Dr. Rosenfield has received research grants from Abbott Vascular, Atrium, Lutronix-Bard, Baxter, and IDEV; has received consulting/advisory board fees from Abbott Vascular, Complete Conference Management, Endospan, Micell and Vortex-AngioDynamics; has equity in CardioMEMs, Contego, Embolitech, Icon, Micell, Primacea, and Vortex; and has served on the board of directors for VIVA Physicians (501C3). Dr. Spertus is affiliated with the Saint Luke's Mid America Heart and Institute, which is the major analytic center for the PINNACLE Registry; receives funding from the American College of Cardiology for this role; is on the Scientific Advisory Board of United Healthcare; and reports a financial relationship with Health Outcomes Sciences. Dr. Rumsfeld has a contract with the ACCF for his role as the Chief Medical Officer of the NCDR. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Manuscript received April 26, 2013; accepted May 7, 2013.