

Improving Outcomes of STEMI in Puerto Rico Through the **PRINCE Initiative**

By Orlando Rodriguez-Vila, MD, FACC



It is estimated that 25 to 35 percent of patients with ST segment elevation myocardial infarction (STEMI) die

before reaching the hospital, and of those who make it to the hospital, 10 to 20 percent may die in-hospital, and many of the survivors will suffer from heart failure.

Since it is widely known that reducing the time to reperfusion in patients with acute STEMI reduces mortality, and the best outcomes in both morbidity and mortality are obtained with a door-to-needle time of less than 30 minutes or a door-to-balloon (D2B) time less than 90 minutes, the ACC's Puerto Rico Chapter, along with leading local interventional cardiologists developed the Puerto Rico Infarction National Collaborative Experience (PRINCE) initiative to help address the need to improve outcomes of STEMI.

Developed in 2010, the PRINCE initiative is an expansion of the ACC's D2B initiative efforts in Puerto Rico, and is led by a working group that includes **Fernando Lapetina, MD, Miguel A. Campos, MD, FACC, Sameer Mehta, MD, FACC, MBA,** and myself, along with six other physician volunteers.

Recognizing that early symptom recognition and response by the patient, rapid response and transport by an Emergency Medical Service (EMS) system, and rapid emergency room triage and effective reperfusion treatment are the core links in the STEMI survival chain, the PRINCE initiative is a concerted collaborative effort to implement a staged renovation of STEMI care processes based on these four pillars:

- 1. Hospital processes that reduce D2B time:** implementation of standardized STEMI percutaneous coronary intervention (PCI) protocols in all PCI-capable hospitals in Puerto Rico along with education and training of physicians, staff, and paramedics who work in the line of STEMI care.
- 2. Integrate the EMS system into a strategic network of care:** revise and optimize processes in the EMS response system to include pre-hospital diagnosis, triage and intervention and integrate these into a coordinated regionalization of STEMI PCI care including both on-field and inter-hospital transfer response.
- 3. Measure treatment patterns and outcomes:** conduct prospective data collection and analysis on patterns of care and short-term and long-term mortality from STEMI in patients undergoing STEMI PCI, using the Puerto Rico STEMI-PCI Registry.
- 4. Improve patient response and utilization of 911:** educate the population on the early recognition of STEMI symptoms and increase the utilization of the EMS system.

Every region in Puerto Rico is within a one-hour radius from its nearest PCI center, so one of the first objectives was to establish a Nationwide STEMI-PCI Network. To date, all six of the PCI hospitals serving the greater San Juan Metro area and the south, central and western parts of Puerto Rico, have actively collaborated in the initiative.



Watch Video Online
bit.ly/1cyLGYi

Championed by ACC Fellows in Training **Ricardo Santiago, MD,** and **Valentin del Rio, MD,** the ACC Puerto Rico Chapter produced an educational video on the history of STEMI-PCI and the PRINCE initiative, which made its premiere during the 24th Scientific Sessions in San Juan last May, and has since been extensively used in hospital educational programs across Puerto Rico.



Each of the participating PCI hospitals has a physician champion who is the liaison between the working group and the hospital, and together with an appointed hospital STEMI coordinator is responsible for three critical steps: 1) to help execute the quality improvement processes in the ED and the cath lab; 2) to lead a monthly quality management committee meeting where representatives from the ER, cath lab, and hospital admin-

istration review the time performance and outcome of the most recent cases; and 3) to provide feedback on performance to members of the health care team.

Now that the nationwide network has been established and has been in place for several years, the true success of the PRINCE initiative will be determined by the sustainability of the collaboration, which should result in improved care and lives saved from acute myocardial infarction. An even broader impact may result by stimulating similar collaborative initiatives in other areas of health and social needs for the betterment of Puerto Rico.

Learn more about the PRINCE initiative at ACCPuertoRico.org/PRINCE.html.

Rodriguez-Vila is governor of the ACC Puerto Rico Chapter and co-chair of the PRINCE Working Group.