

# A Quarter Century of Heartbeats: The Evolving Symphony of STEMI Interventions

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As I commemorate a quarter-century dedicated to a ST-segment elevation myocardial infarction (STEMI) interventions-only practice, I reflect on a journey marked by extraordinary progress and evolving challenges. My career, focused on achieving optimal door-to-balloon (D2B) times, has been intertwined with some of the most significant advancements in cardiovascular medicine, showcasing the profound impact of primary percutaneous coronary intervention (PCI) in saving lives.

STEMI interventions represent a pinnacle of modern medical innovation, embodying the blend of technical skill, rapid response, and collaborative healthcare that translates into lifesaving therapy for countless individuals. The evolution from early PCI to the establishment of door-to-balloon (D2B) times as a critical performance metric illustrates a relentless pursuit of excellence in patient care. The formation of STEMI networks and systems of care has not only standardized treatment protocols but also democratized access to high-quality emergency cardiac care globally.

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Pioneers including Dr. Alice Jacobs, Dr. Timothy Henry, Dr. Cindy Grines, Dr. Ivan C. Rokos, and Dr. Christopher Granger have been instrumental in advancing our understanding and management of acute MI. Their contributions, alongside the establishment of Lumen Global STEMI conferences and LATIN Telemedicine, have fostered international collaboration and innovation, shaping the landscape of heart attack care.

Significant advancements have also been made in ambulance care and pre-hospital management, with technologies like Impella (Abiomed), AngioJet (Boston Scientific), and cangrelor enhancing our armamentarium for dealing with complex cardiac events. These innovations reflect a broader trend

towards more sophisticated, immediate interventions that have undoubtedly saved numerous lives.

However, the golden era of straightforward STEMI interventions is giving way to a more nuanced reality. The typical patient profile today is markedly different; many present with complex histories, including multiple prior PCIs and a maze of existing stents. Instances of in-stent thrombosis are on the rise, presenting significant treatment challenges. Additionally, the prevalence of vascular and structural heart disease complicates access routes, particularly when dealing with recurrent radial or femoral interventions.

Moreover, elderly and female patients often present with unique challenges that impact D2B times and overall outcomes. Combined with the increasing prevalence of comorbid conditions, these factors signal a shift towards more intricate and time-consuming procedures.

Despite these evolving challenges, it is crucial to acknowledge the resilience and adaptability of the cardiovascular community. The possible shift back to more femoral access in certain complex cases, while seemingly a regression, is a testament to our commitment to patient care, emphasizing the necessity of flexibility and innovation in our approach.

Looking forward, the field of STEMI interventions will undoubtedly require a blend of experience, continuous learning, and adaptability, particularly as we confront an aging population with complex clinical histories. The need for ongoing education, research, and collaboration has never been more pronounced, ensuring that we remain at the cutting edge of cardiac care.

In conclusion, despite the hurdles we face, the essence of STEMI interventions as one of mankind's most brilliant medical achievements remains unchanged. As I reflect on 25 years of service in this dynamic field, my sense of fulfillment is profound. The opportunity to contribute to the evolution of this lifesaving procedure, to learn, teach, and save lives, is a privilege for which I am eternally grateful. The journey of STEMI interventions, much like the heart it aims to heal, is an enduring testament to the resilience and indomitable spirit of both patients and caregivers alike. ■



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