LATIN telemedicine - expanded umbrella of cost-effective ami coverage for 100 million people

Authors:
MA Torres¹, S Mehta¹, R Botelho¹, F Fernandez¹, J Cade¹, M Prudente¹, R Cavalcanti¹, C Dusilek¹, F Bojanini¹, O De Los Rios¹, M Alcocer Gamba¹, A Frauenfelder¹, C Matheus¹, D Vieira¹, J Mazzini¹, ¹Lumen Foundation - Miami - United States of America,

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Background: AMI is a unique entity where the immediate diagnosis can be made by a single test, the EKG. Despite this matchless attribute of easy diagnosis, developing (and some developed) countries lack resources and efficient pathways for urgent and reliable diagnosis of AMI. With Latin Telemedicine Infarct Network (LATIN), we have previously presented Telemedicine as a pragmatic solution for urgent and accurate diagnosis of AMI. In this work, we reveal pathways of scalable population-based AMI management models.

Purpose: To utilize telemedicine as a foundation pillar for creating cost-effective and global models of AMI management.

Methods: LATIN pilot tested the hypothesis of remote guidance of AMI management and expanded access by creating a hub and spoke, STEMI systems of care that exploited regional resources. A highly efficient, web-based, cloud-computing prototype was developed and scrupulously monitored with a new metric of time to telemedicine diagnosis (TTD). STEMI systems of care were created to efficiently triage the diagnosed patients for being treated with thrombolysis, pharmaco-invasive management or Primary PCI. This stratagem had enormous provincial variability and was constrained mainly by ambulance structure. Telemedicine and IT costs were forced lower and enabled a cost-effective process to hugely provide access to 100 million patients located in poorer regions of Colombia, Brazil, Mexico, and Argentina. Education and training have formed the mantra for LATIN and stakeholder development, and ambulance systems development has remained immutable goals.

Results: Almost 800,000 patients were successfully screening through LATIN with a cost for accurate STEMI diagnosis of < $3, a tele accuracy that exceeded 95% and with TTD <4 minutes. A total of 8,440 (1.1%) of patients were diagnosed with AMI in this manner and 3,924 (46.5%) urgently reperfused, mainly with Primary PCI (3,048, 77.8%). D2B times have been lowered now to 51 minutes but this is fortuitous, as several PCI-capable facilities are small, and direct transfer to the catheterization laboratory is easy. Door in and Door out times and transport times remain high as a large number of patients are denied by insurance and other payers for treatment. Overall, mortality is 5.2%.

Conclusions: Global financial and philanthropic institutions should contemplate models analogous to LATIN for saving the lives of millions of poor patients in developing countries from AMI.
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