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The Middle East and  
North Africa (MENA)  
region faces unique  
challenges in  
stroke care.

# The Impact of Quality Improvement Programs on Stroke Care in the MENA Region

# Introduction

Stroke is a leading cause of death and disability worldwide, and the Middle East and North Africa (MENA) region faces unique challenges in stroke care. Maria Khan Junaidi, MD, Co-Director of the Comprehensive Stroke Center at Rashid Hospital in Dubai; Vice President of the MENA Stroke Organization; member of the Board of Directors for the World Stroke Organization; and UAE National Coordinator for SITS, presented on the impact of quality improvement programs on stroke outcomes in this region at Arab Health.

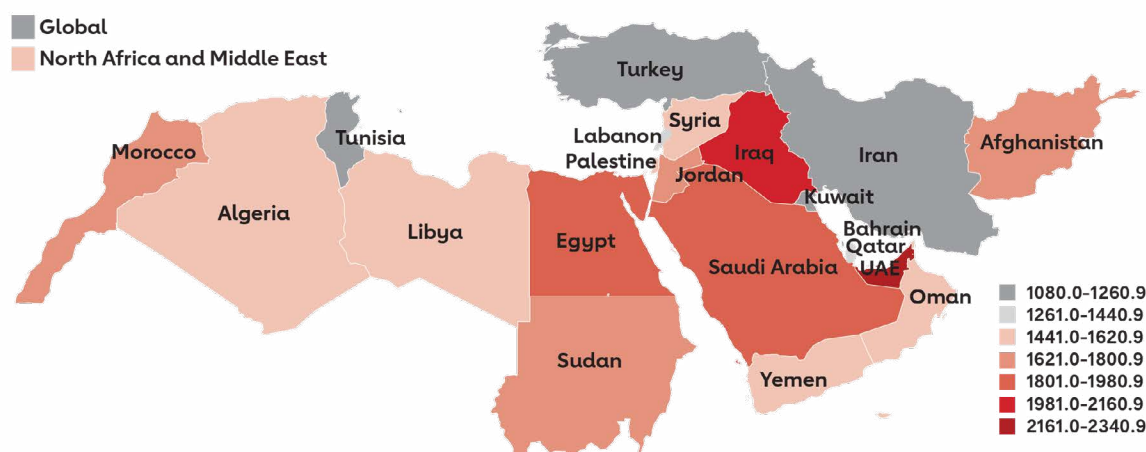
Given the region's diverse socio-economic landscape, implementing quality improvement

programs plays a critical role in enhancing stroke care outcomes, with age-standardized prevalence and death rates reaching **1537.5** and **87.7 per 100,000**, respectively.

Establishing certified centers, like the Comprehensive Stroke Center at Rashid Hospital, helps minimize controllable variations in the continuum of care and improve patient survival. Given the region's diverse socio-economic landscape, implementing quality improvement programs plays a critical role in enhancing stroke care outcomes.

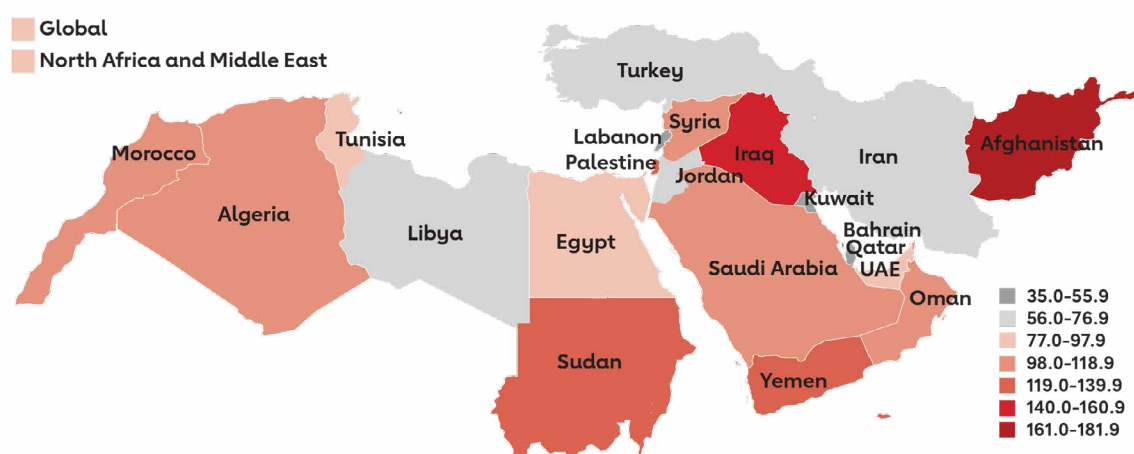
## STROKE: Age Standardized point prevalence

Age-standardized prevalence per 100,000 population in 2019



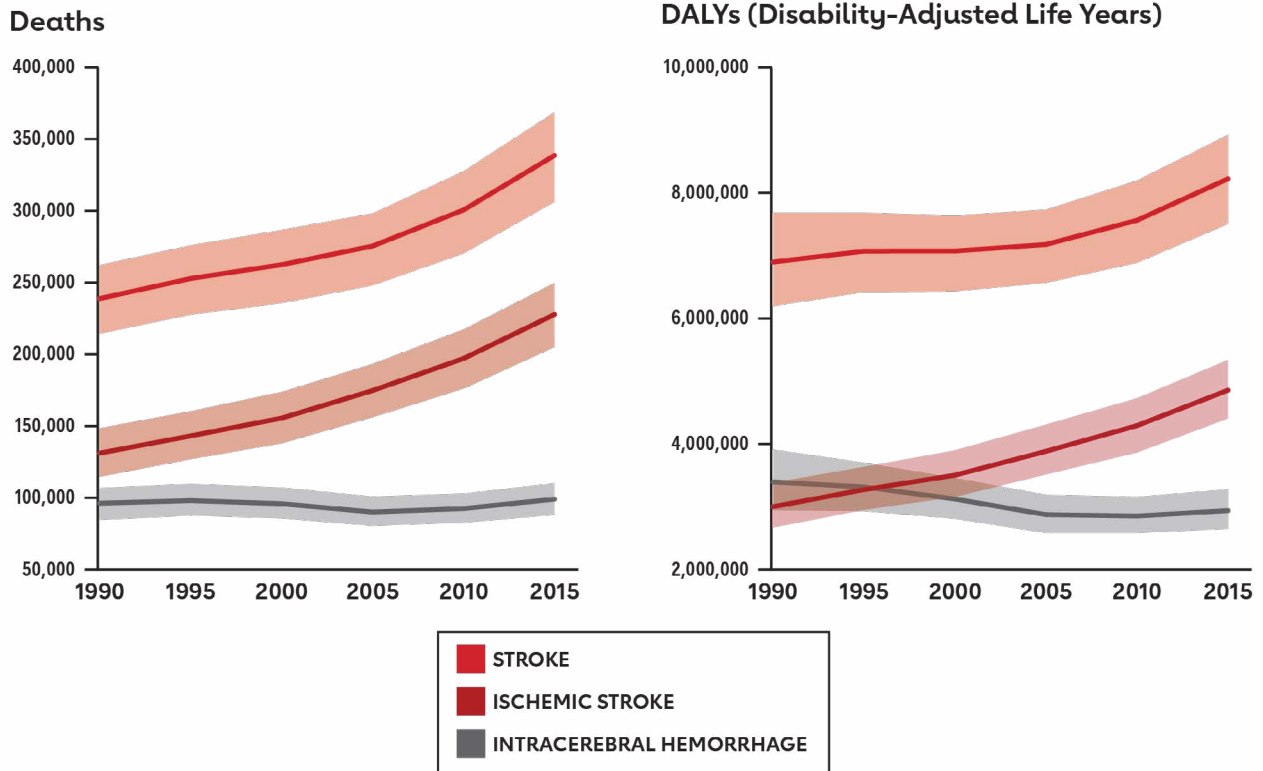
## STROKE Deaths

Age-standardized death rate per 100,000 population in 2019



The economic and social impact of stroke underscores the need for structured intervention through hospital-led quality improvement initiatives.

#### NORTH AFRICA AND MIDDLE EAST, BOTH SEXES, ALL AGES



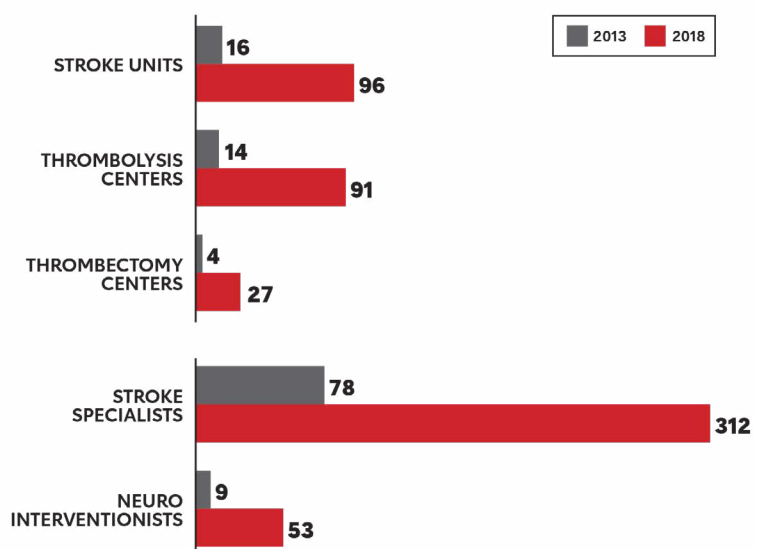
GBD 2019 Stroke Collaborators. Global, regional, and national burden of stroke and its risk factors, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Neurol. 2021 Oct;20(10):795-820. doi: 10.1016/S1474-4422(21)00252-0. Epub 2021 Sep 3. PMID: 34487721; PMCID: PMC8443449.

### Increases in Stroke Services: from 2013 to 2018

The availability of stroke specialists, stroke units, thrombolysis centers, and neuro interventionists soared across the region

#### State of Stroke Services between 2013-2018

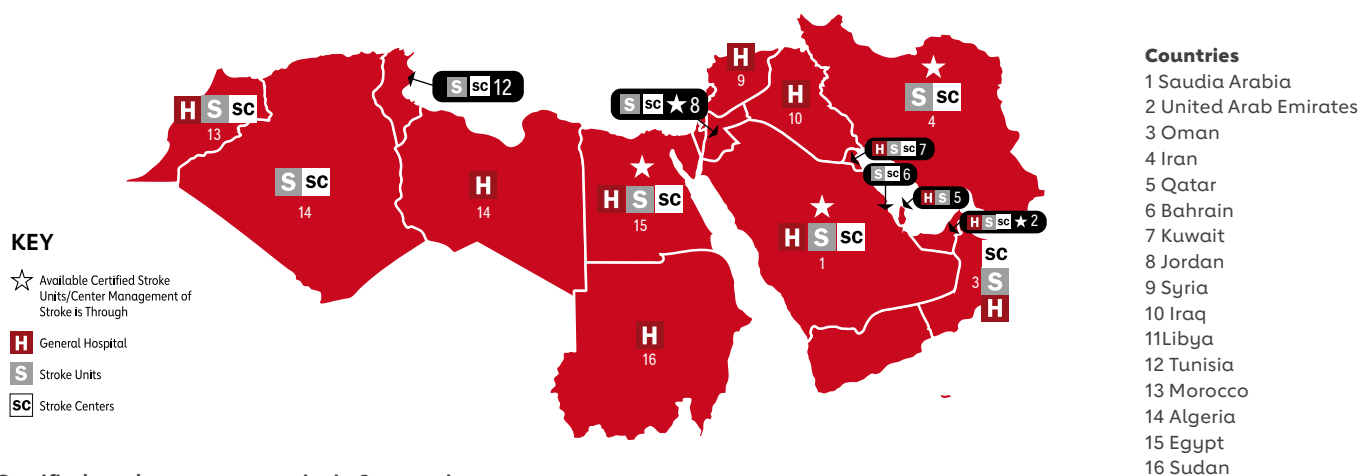
The availability of stroke specialists, stroke units, thrombolysis centers, and neuro interventionists soared across the region.



Khan, M., and S. Al Rukn. "Changing face of stroke care in the middle east north africa region." Journal of the Neurological Sciences 405 (2019): 50-51

# State of Stroke Services- 2022

Out of 16 participating MENA countries



Certified stroke centers or units in 6 countries  
Code stroke between EMS and hospitals active in 6 countries  
Thrombolysis available in 15 and thrombectomy in 13 countries

Aref, Hany, et al. "Stroke services in MENA: What is there and what is needed." PLoS one 18.7 (2023): e0288030.

Recent studies show that stroke incidence in the MENA region has evolved over the past three decades, influenced by factors such as high systolic blood pressure, obesity, and air pollution. Countries such as Afghanistan, Egypt, Iraq, Jordan, and Saudi Arabia have reported significantly higher burdens, while others like Lebanon, Kuwait, Qatar, and Turkey have comparatively lower burdens.

## Quality Improvement in Stroke Care

Hospitals in the MENA region are increasingly adopting evidence-based quality improvement programs to standardize and enhance stroke care.

Certification brings standardization across the continuum of stroke care, ensuring evidence-based practices and measures are met as consistently as possible to improve patient outcomes. At Rashid Hospital, certification improved the quality of care in four ways:



**CME tracking for key staff** became more organized and more efficient, ensuring more staff were correctly up-to-date on the latest practices.



The staff was able to spend time each month discussing cases that had less than optimal results and how those could have been improved.



**Clinical practice guidelines** became more organized and easier to follow.



**KPI collection and dissemination** among the staff has increased ownership and is more positively viewed by all.



## Key Benefits of Stroke Center Certification

- ✓ Adherence to top global guidelines
- ✓ Excellence in care delivery
- ✓ Continuous and effective quality improvement
- ✓ Improved patient outcomes and survival
- ✓ Reduced errors
- ✓ Improved efficiency
- ✓ Improved clinical outcomes
- ✓ Support for implementing guideline-directed therapies
- ✓ Use of data to identify and correct gaps in care
- ✓ Improved timely access to care

# Strategies to Improve Stroke Outcomes Across MENA Region



## Risk Factor Screening & Public Awareness

Programs aimed at early detection and prevention of stroke-related risk factors, such as high blood pressure and diabetes, can significantly reduce stroke incidence.



## Establishing Stroke Registries

National stroke registries are crucial for monitoring trends, improving care quality, and guiding policy decisions. Historically, the MENA region lacked organized stroke registries, but recent efforts, including collaborations with international stroke organizations, have helped in building a foundation for data collection. Hospitals should actively participate in these registries to contribute valuable insights into stroke epidemiology and treatment outcomes.



## Emergency Stroke Protocols

Code stroke activation between emergency medical services (EMS) and hospitals is operational in just six out of sixteen surveyed countries in 2022. These EMS protocols should be widely implemented.



## Acute Treatment Availability

Thrombolysis was accessible in fifteen countries, while thrombectomy services were available in thirteen, highlighting gaps in acute stroke intervention. Improving access to acute interventions is key to improving stroke outcomes.



## Certified Stroke Centers

There are currently seven American Heart Association/American Stroke Association certified stroke units, necessitating further expansion to ensure comprehensive coverage in regards to promoting adherence to global guidelines, fostering continuous quality improvement, and ultimately leading to better patient outcomes.



## Stroke Rehabilitation

Eleven countries provide rehabilitation services, which remain crucial for post-stroke recovery and reducing disability. Improving rehabilitation infrastructure is critical for stroke outcomes.



## Need for Data Analysis

With the increase in available care, the region needed to plan for improvement by investing in quality programs to improve stroke outcomes across a diverse region through evidence-based practice.

## Conclusion

Quality improvement programs are essential for advancing stroke care in the MENA region. By adopting a structured approach to stroke management, hospitals can significantly reduce stroke-related mortality and disability while improving overall healthcare efficiency. Investing in stroke care infrastructure, standardizing treatment protocols, and fostering a culture of continuous improvement will pave the way for a healthier future in the region.