



# Challenges of orthopaedics and trauma care in the Africa, Near and Middle East region

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Published online: 21 November 2023  
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Among the regions of SICOT, Africa, Near and Middle East (ANME) is the second largest. It consists of 69 countries with a population of 1.642 billion. Those countries with national representatives in SICOT are 27, in addition to three with national secretaries.

According to the World Bank, countries and territories are divided into four categories:

- 1- Low income: GNI (gross national income) per capita of \$1045 or less.
- 2- Lower-middle income: GNI per capita between \$1046 and \$4125.
- 3- Upper-middle income: GNI per capita between \$4126 and \$12,745.
- 4- High income: GNI per capita of \$12,746 or more [1]

This region includes a mixture of different income category countries, ranging from low to high income, although the majority are low and low middle income category-LMIC (48 out of 69).

As these countries differ in their income, they do also differ in their developmental goals, priorities, Universal Health

Coverage (UHC), equitable government health care facility access, trauma care, orthopaedic pathology and research support and outcomes. Countries of this region are challenged by poverty, civil war, regional conflicts, trauma and disabilities. Lack of resources, training and equipment for orthopaedic trauma and musculoskeletal disease adds to the challenges [2].

Some of the challenges facing orthopaedic care in Africa and the Middle East are:

1. Training and retention of doctors in the specialty of trauma and orthopaedics [3].
2. Inequitable access to health services, especially for rural and poor populations [4].
3. Inadequate human resources, inadequate budgets, poor management [5].
4. Shortage in the use of effective health information systems and leadership challenges [3, 5].
5. Rising burden of non-communicable chronic diseases, such as osteoarthritis, osteoporosis, diabetes and injury [3, 4].

The ANME region includes two geographic regions, the Middle East and North Africa (MENA) and Sub-Saharan Africa. The literature tends to discuss issues related to health care and orthopaedics under those titles. The MENA countries have more of the categories 2, 3 and 4 of World Bank (WB) classification and sub-Saharan Africa more of categories 1 and 2, and hence the problems, challenges and achievements may differ.

The MENA population is mainly urban and young and about half of its countries contribute to the energy production of the world [6–8]. Despite the wealth of resources, there has been modest progress and reduction of poverty in the region in comparison with other countries [4, 8]. The MENA region has shown significant developments in their health systems and the health outcomes of their population over the past decades, although there are significant variations among and within countries of the MENA region in

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these achievements [4, 9, 10]. Over the years, there has been epidemiological transition manifesting itself in the reduced burden of communicable diseases and increased burden of injury and noncommunicable disease (NCD) [7, 11].

A major cause of premature mortality in the MENA region is the increasing numbers of road traffic injuries (RTIs), due to increased rates of urbanization and traffic volume in the presence of inadequate road infrastructure and safety measures [8, 12].

According to the WHO, MENA countries will have to address several weak aspects of their health systems as [8]:

- A- Weak policy analysis, formulation, coordination and regulation
- B- Limited cooperation among sectors
- C- Poor community participation in planning and provision
- D- Inadequate health information systems, human resource policies and management of health services at all levels

Among the challenges facing the health care planners in the MENA region are [8]:

- A- Increasing pressure on health services due to growing demands
- B- Technological advances and rising public expectations, augmented by economic sanctions in some countries
- C- The growing burden of non-communicable diseases and RTI. The NCD has been among the significant challenges that have been hindering countries' effort to achieve UHC.

Sub-Saharan Africa (SSA) is also mainly young in population and 42% of its population is urban (<https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=ZG>). It is considered the world's fastest urbanizing region (<https://www.csis.org/analysis/urbanization-sub-saharan-africa>). Health systems in SSA often lack equity, and the rural access to health care remains a challenge due to urban bias, social determinants of health and transportation-related barriers [13]. There has been renewed commitments of African countries towards (UHC), defined by WHO as 'the ability of everyone to access the healthcare services that they need, of good quality, without the risk of financial hardship' (WHO 2007) [14] ([ahaic.org/download/the-state-of-universal-health-coverage-in-africa](http://ahaic.org/download/the-state-of-universal-health-coverage-in-africa)). In their study on the healthcare systems challenges in Africa, Oleribe OO et al. identified the top three challenges as inadequate human resources (34.29%), inadequate budgetary allocation to health (30%) and poor leadership and management (8.45%), and they suggested three main solutions in the form of training and capacity building for health workers (29.69%), increase budgetary allocation to health (20.31%) and advocacy for political support and commitment (12.31%) [5].

As mentioned above, the majority of ANME are included in the LMIC category and the orthopaedic and trauma care access, disparity and challenges are similar to other LMIC worldwide. The ANME, and especially SSA, is far from a homogenous geographical or sociopolitical entity [15] ([ahaic.org/download/the-state-of-universal-health-coverage-in-africa/](http://ahaic.org/download/the-state-of-universal-health-coverage-in-africa/)). Although literature usually describes the disparities of trauma and orthopaedic care between LMIC and HIC, it is the internal disparities which are of concern. Alayande B et al., in their review of access to trauma care in the SSA reported an underdeveloped trauma system, except for South Africa, and consistent rural–urban disparity in trauma care access with disadvantage of the poor as well as disparity between adult and paediatric trauma care [15] (16 [ahaic.org/download/the-state-of-universal-health-coverage-in-africa/](http://ahaic.org/download/the-state-of-universal-health-coverage-in-africa/)). They reported some good examples to reduce the inequity in access to trauma care, as prehospital initiatives, as used in Ghana, and community-based insurance, as modelled by Rwanda [16, 17].

Several ANME countries have been afflicted by war and its consequences. In Africa, war injuries are among the leading causes of death and disability-adjusted life years (DALYs) for people aged 15–49 years [18]. In their study on the burden of orthopaedic and trauma care in LMIC, Turner and Duffy [3] confirmed the disparities of trauma care between LMIC and HIC with higher chances of dying or having a permanent disability if you reside in LMIC. If injury rates in LMIC were reduced to those seen in the West, 50 million disability-adjusted life years (DALYs) would be averted along with a reduction in mortality of two million people and cost savings of \$786 billion [19].

Among essential aspects of trauma and orthopaedics that must be dealt with in LMIC are [3]:

1. Training and retention of doctors in the speciality of trauma and orthopaedics, by improving in-country training opportunities, clear career progression and increased supervision. Sending doctors from LMIC to train in HIC will not lead to sustainable outcome, unless efforts to tailor their training by incorporating resources only available to them in those low-income regions should be made [20, 21].
2. Development of a trauma system and trauma registry. Within LMICs, the initial stabilisation and transport of the injured is rudimentary and is performed most commonly by untrained bystanders [3]. Creation and deliverance of first-responder training programmes decreases mortality and physiological severity scores in LMICs [22].
3. Resource availability. In low-resource situations, one requires a realistic trauma system that optimise locally available equipment and services. Simple measures like a trauma package with basic provisions could avert a million deaths [23].

The theme of this special issue of International Orthopaedics is ‘orthopaedics in the ANME region’. We thought to allow submission on different topics, to give an idea of the main orthopaedic work in our region. This issue has twenty-five papers from many countries in the region (Qatar, The Kingdom of Saudi Arabia, Egypt, Tunisia, Morocco, The Arab Emirates, Jordan, Iran, Lebanon). Most of the work—as expected—describes trauma (eight papers), sports (three papers), general orthopaedics (five papers) and arthroplasty (five papers).

I would like to thank the chief editor for his relentless support and advice. I would also like to thank Professor Ahmad H Abdelazeem with whom there was the original contact for delivery of this issue.

Above all I thank our orthopaedic colleagues at ANME for their contribution and support. This issue only presents a sample of work done in ANME, and there was more which could have been included, but we had to accommodate papers within the available space. We hope that future studies will develop specialties.

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