



# WORLD FEDERATION OF NEUROSURGICAL SOCIETIES

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WFNS FOUNDATION

GLOBAL NEUROSURGERY INITIATIVE

PROGRAM IN GLOBAL SURGERY AND SOCIAL CHANGE



# WORLD FEDERATION OF NEUROSURGICAL SOCIETIES

- 1955
- 130 NEUROSURGICAL SOCIETIES
- 49,000 NEUROSURGEONS
- NYON, SWITZERLAND
- OFFICIAL RELATIONS WITH THE WHO



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# BOGOTA DECLARATION



*"We call on the neurosurgeons as well as their professional societies of the world and related stakeholders to take urgent coordinated action to lead and address the unmet global neurosurgical need." Bogota, Colombia, December, 2016*

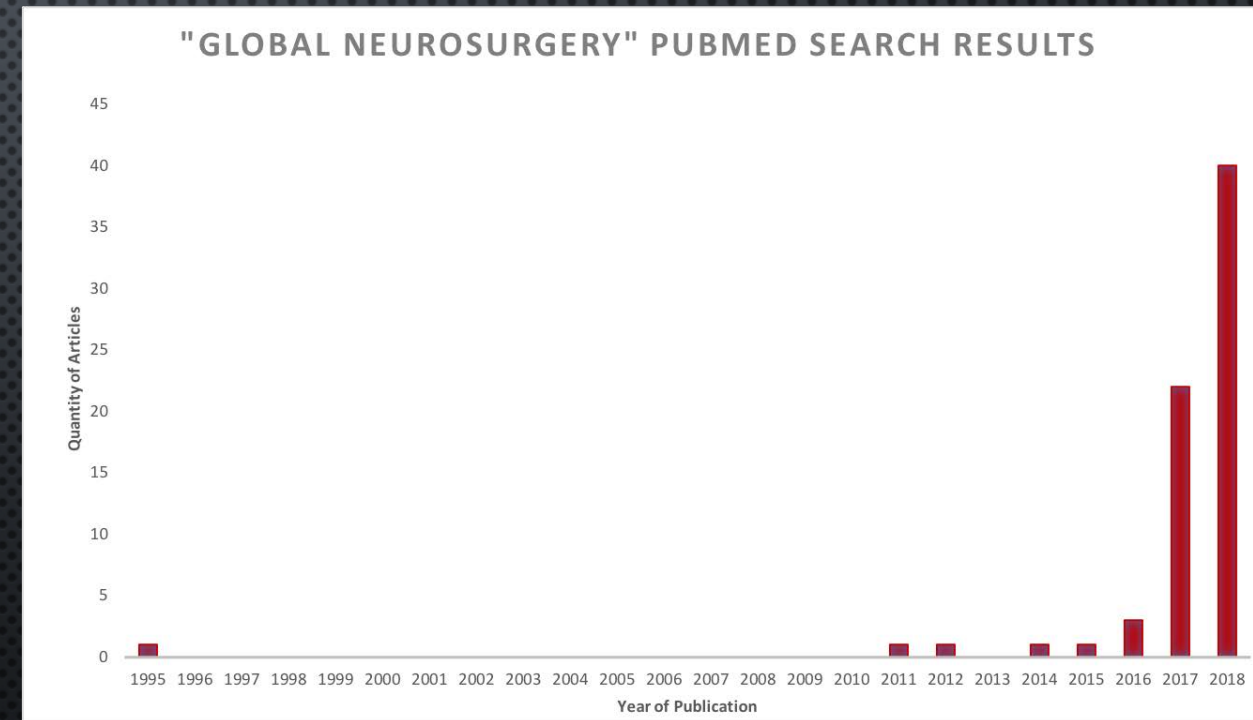


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# RESEARCH

- 5 MILLION NEUROSURGICAL CASE DEFICIT
- 20,000 ADDITIONAL NEUROSURGEONS NEEDED
- HEAD INJURY 50%



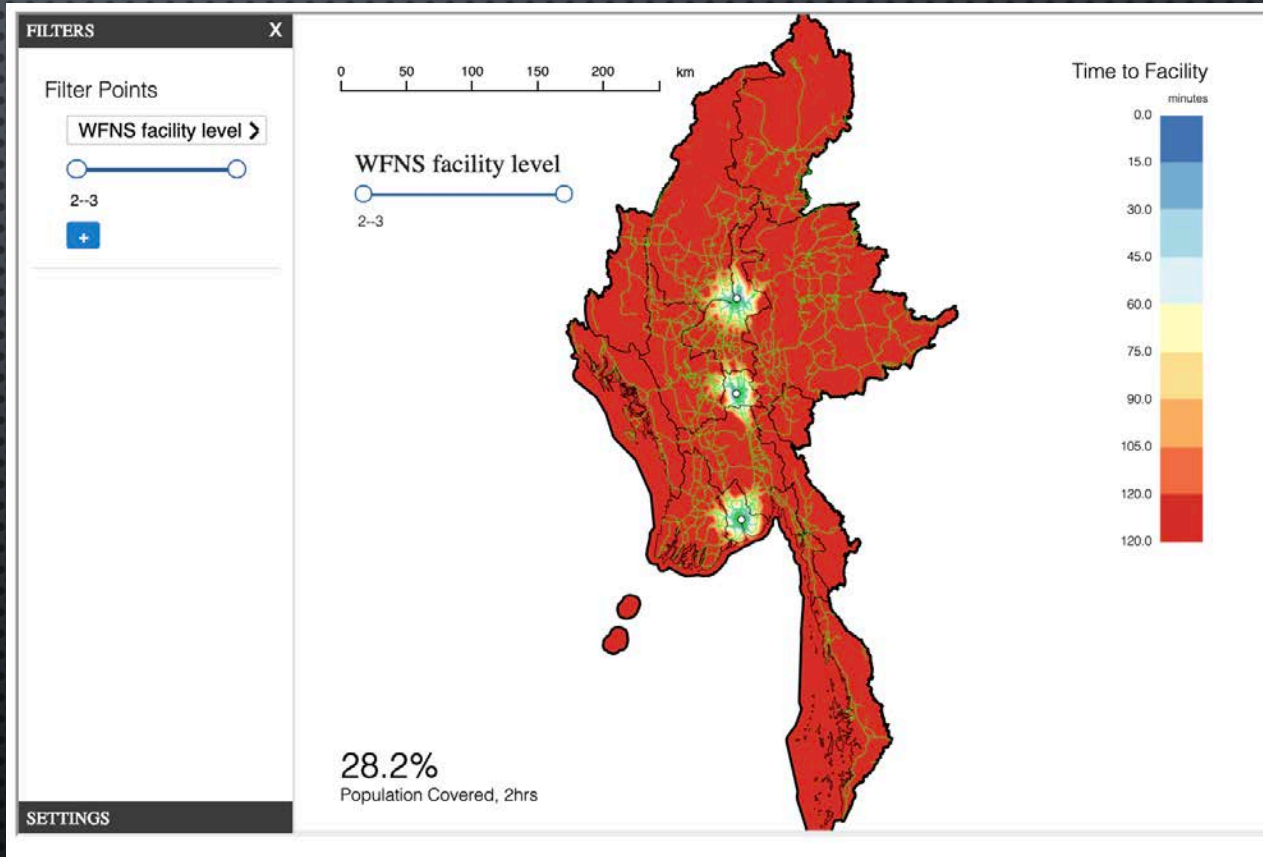
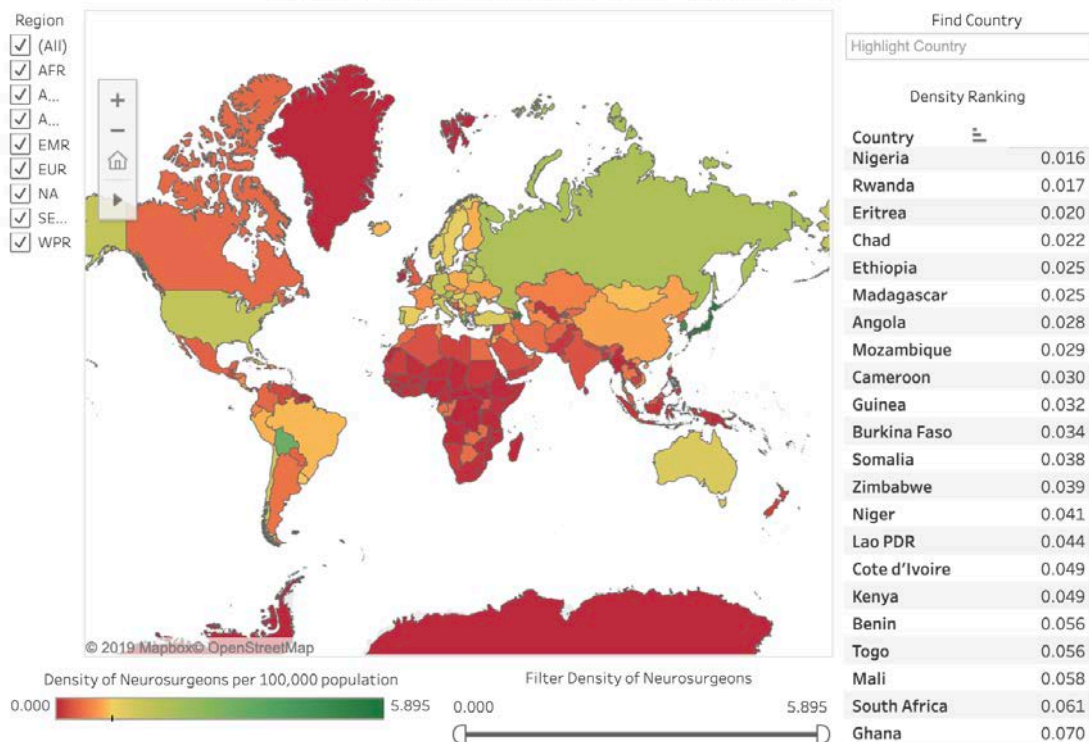
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# Global Neurosurgical Workforce and Capacity Mapping Project

## Global Neurosurgical Workforce Map

### 2016 World Neurosurgery Workforce



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# Comprehensive Policy Recommendations for Head and Spine Injury Care in LMICs



## Vision

No person experiences undue disability or death due to head and spine injury regardless of where they live



	Surveillance	Prevention	Pre-hospital care	Surgical system	Rehabilitation
<b>Infra-structure</b> 	<ul style="list-style-type: none"> <li>-Integration through agile platforms</li> <li>-Leverage international partnerships for surveillance</li> </ul>	<ul style="list-style-type: none"> <li>-Safe roads</li> </ul>	<ul style="list-style-type: none"> <li>-Contextualized pre-hospital system</li> </ul>	<ul style="list-style-type: none"> <li>-80% of population within 4-hours of neurotrauma center</li> <li>-Strengthen pre-existing trauma infrastructure for neurotrauma</li> </ul>	<ul style="list-style-type: none"> <li>-Contextualized allocation of space and stuff for neuro-rehabilitation</li> <li>-Facility stratification for severity</li> </ul>
<b>Workforce</b> 	<ul style="list-style-type: none"> <li>-Fit for purpose workforce for data collection, analysis, and interpretation</li> <li>-Align international collaborations to support local workforce capacity</li> <li>-Flexible and strategic use task-shifting and task-sharing to optimize human resources</li> </ul>	<ul style="list-style-type: none"> <li>-Robust workforce for public health education and implementation</li> </ul>	<ul style="list-style-type: none"> <li>-Neurotrauma care training of emergency medical personnel</li> </ul>	<ul style="list-style-type: none"> <li>-1 neurosurgeon per 200,000 people at minimum</li> <li>-Task-sharing of surgical workforce is preferred over task-shifting</li> <li>-Dramatically increase neurosurgical training capacity</li> </ul>	<ul style="list-style-type: none"> <li>-Ensure rehabilitation training capacity is adequate</li> <li>-Ensure competency throughout continuum education</li> </ul>
<b>Service delivery</b> 	<ul style="list-style-type: none"> <li>-Minimum data to include demographics, diagnosis, mechanism, severity, and outcome measure</li> <li>-Use existing trauma registry</li> <li>-Use WHO Trauma System Maturity Index to monitor progress</li> </ul>	<ul style="list-style-type: none"> <li>-Strengthen public education</li> <li>-Encourage safety-conscious "Ride hailing" services</li> <li>-Strengthen enforcement of safety laws</li> </ul>	<ul style="list-style-type: none"> <li>-Prevent hypotension and maintain oxygenation</li> <li>-Time from injury to neurotrauma facility should not exceed 4-hours</li> </ul>	<ul style="list-style-type: none"> <li>-Standardization of essential neurotrauma equipment</li> <li>-CT scanner in all neurotrauma facilities</li> <li>-Critical care unit in all neurotrauma facilities</li> <li>-Leverage telemedicine as a tool for increasing coverage</li> <li>-Innovate for low-resource settings</li> </ul>	<ul style="list-style-type: none"> <li>-Sensitive to gender and age sub-groups</li> <li>-Partner with family for delivery of non-technical physical therapy</li> </ul>
<b>Financing</b> 	<ul style="list-style-type: none"> <li>-Maximize external funding</li> <li>-Build internal capacity</li> <li>-Use open-source platforms</li> </ul>	<ul style="list-style-type: none"> <li>-Promote health benefits of public investment in safe roads</li> <li>-Partner with external organizations for advocacy</li> </ul>	<ul style="list-style-type: none"> <li>-Cost-effective training models</li> <li>-Utilize low-cost or free digital technology</li> </ul>	<ul style="list-style-type: none"> <li>-Embed neurotrauma within universal health coverage package</li> <li>-International partnerships for neurotrauma capacity building</li> </ul>	<ul style="list-style-type: none"> <li>-Embed neurorehabilitation within universal health coverage package</li> </ul>
<b>Information management</b> 	<ul style="list-style-type: none"> <li>-Utilize WHO International Registry for Trauma and Emergency Care (IRTEC)</li> </ul>	<ul style="list-style-type: none"> <li>-Tracking of safety law compliance</li> </ul>	<ul style="list-style-type: none"> <li>-Encourage data collection by emergency medical personnel</li> </ul>	<ul style="list-style-type: none"> <li>-Track neurotrauma workforce and operative mortality</li> </ul>	<ul style="list-style-type: none"> <li>-Collection of neurorehabilitation outcome data</li> </ul>
<b>Governance</b> 	<ul style="list-style-type: none"> <li>-Empower ministry of health leadership</li> <li>-Utilize reporting requirements to improve accountability and compliance</li> </ul>	<ul style="list-style-type: none"> <li>-Regulatory framework to strengthen enforcement</li> <li>-Comprehensive helmet laws</li> <li>-Workplace safety regulations</li> </ul>	<ul style="list-style-type: none"> <li>-Inclusion of pre-hospital care in national health plans</li> </ul>	<ul style="list-style-type: none"> <li>-Draw on existing international technical resources to assist with neurotrauma capacity building</li> <li>-Promote neurotrauma as vital to achieving national and international health and development goals</li> </ul>	<ul style="list-style-type: none"> <li>-Rehabilitation is indispensable to a quality health system</li> </ul>





## SURVEILLANCE



**Surveillance and innovation** is a key strategy for countries lacking computerized health systems



**Enforcement of existing regulations and laws** is essential for the prevention of spinal cord injury worldwide



## PREVENTION



## PRE-HOSPITAL CARE



## SURGICAL SYSTEM



## REHABILITATION



Development of **Contextual pre-hospital care** is a priority



The number of neurotrauma cases should be placed within less than **4 hours** for 80% of the patients



Provision of neuro-rehabilitation includes **physical space, facilities, and durable medical equipment**



Promote **active involvement from the family and community**, including Community-Based Rehabilitation Services



**Research agendas and outcome assessment frameworks** must consider neurorehabilitation as part of an integrated national agenda



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