



# 2017

REPORT AND RECOMMENDATIONS

## II EMT REGIONAL MEETING OF THE AMERICAS

*Right actions at the right time save lives*

November 27-29, 2017

Quito, Ecuador.



Pan American Health Organization



World Health Organization  
REGIONAL OFFICE FOR THE Americas



EMERGENCY MEDICAL TEAMS

*With the financial support of:*



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*Participants of the II EMT Regional Meeting of the Americas*

# Executive Summary

The 2nd Regional Meeting of Emergency Medical Teams (EMT) in the Americas was held from November 27–29, 2017, in Quito, Ecuador, chaired by the Ministry of Public Health of Ecuador, represented by Dr. Verónica Espinosa in her capacity as Interim Chair of the Regional EMT Group of the Americas. The meeting was co-hosted by the Ministry of Public Health and the Pan American Health Organization.

A total of 109 participants attended the meeting, including 23 officially designated focal points of 23 of Member States of PAHO/WHO (Ecuador, Mexico, El Salvador, Costa Rica, Guatemala, Nicaragua, Panama, Cuba, the Dominican Republic, Haiti, Grenada, Jamaica, Saint Vincent and the Grenadines, Antigua and Barbuda, Guyana, Argentina, Bolivia, Chile, Peru, Brazil, Venezuela, Colombia, Uruguay, and the United States). Experts from the United States, Costa Rica, Argentina, Chile, and Spain) [TN: These are not in alphabetical order (or any other discernible order) in the original.] also attended, as did 17 representatives of NGOs of the Americas which provide EMTs.

The inaugural address of the 2nd Regional Meeting was chaired by Dr. Gina Tambini, PAHO/WHO Representative for Ecuador; Dr. Itamar Rodríguez, interim Deputy Minister for Comprehensive Health Care of Ecuador; and Dr. Ciro Ugarte, Director of the PAHO/WHO Health Emergencies Department (PHE). The inaugural session welcomed the participants of the Meeting and highlighted regional achievements, with special emphasis on the classification of the national EMTs of Ecuador and Costa Rica and the need to continue building EMT capacity in the Americas.

The inaugural session also addressed the regional challenges for EMT response that have been identified in the various instances of implementation of the initiative, with support and feedback from national focal points, NGOs, and other EMT providers, including the workshops of EMT coordinators. This helped frame subsequent debates on opportunities for improve-



*Regional Meeting  
start ceremony*

ment, how to address the challenges faced by different EMT actors, and best practices that should be standardized at the regional level.

Each of the three days of the meeting was focused on strategic discussion of a key stage of implementation of the EMT Initiative in the Americas: Ensuring EMT preparedness (November 27); Addressing the challenges of deployment (November 28); and Coordination and post-deployment (November 29). Side events included a poster gallery of EMT implementation presented by various actors involved in the initiative, a follow-up meeting to the Union of South American Nations (UNASUR) “Declaration on Minimum Standards for Emergency Medical Teams (EMT)”<sup>1</sup> with the focal points of the UNASUR Member States, appointment of the chair and vice-chairs of the EMT Regional Group, and prearranged mentoring meetings.

Overall, the meeting was a key opportunity to facilitate coordination of the EMT Initiative between health authorities, national focal points, NGOs, and the PAHO/WHO EMT Regional Secretariat. All important aspects of the initiative were discussed from the points of view of various stakeholders interested in specific topics, such as alignment and coordination, readiness and response, and challenges in response operations, among others.

Furthermore, the discussion was enriched and deepened by working groups designed and established to provide practical recommendations on topics such as technical requirements for EMTs, recruitment challenges, regulatory and administrative considerations for EMT deployment, national mechanisms for the registration of EMTs, and the Medical Information and Coordination Cell (CICOM). Moreover, a consensus was reached on sub-regional priorities (for Central America, South America, the Caribbean, and NGOs) that will be incorporated into the work plan of the EMT Initiative for the 2018-2019 biennium in the Americas.

There was an exchange of experiences among participants, enriching the work of each country to meet the goals of the initiative. This was achieved in part thanks to the format of the meeting, which allowed for key components of the initiative to be presented in plenary sessions, and for participants to interact through group dynamics and agree on key issues regarding the initiative.

<sup>1</sup> Original title: Declaración sobre estándares mínimos de Equipos Médicos de Emergencia.

At the end of the meeting, Ecuador was officially appointed as the chair of the EMT Regional Group of the Americas by a unanimous vote of the EMT focal points. Costa Rica and Panama were named First and Second Vice Chairs of the Regional Group, respectively.

PAHO/WHO thanks the Government of Ecuador for providing a venue for the II Regional Meeting of EMTs in the Americas and for its continuous support for the initiative; the countries of the Americas for their strong collaboration during 2017 and their commitment to advancing the objectives of the initiative at the national level for stronger regional cooperation during emergencies and disasters; and Spanish Agency for International Development Cooperation (AECID), the United States Department of Health and Human Services, and the strategic partners of PAHO and the EMT initiative for their support in strengthening the Member States' capacities to respond to health emergencies and coordinate humanitarian aid in the Americas. In this regard, PAHO/WHO and the EMT Regional Secretariat of the Americas will continue to work on implementation of the initiative at the regional level, pursuant to the provisions of PAHO Directing Council Resolutions 53 and 55.

# #EMTamericas

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Se inicia la II Reunión Regional de Equipos Médicos de Emergencia de las Américas #EMTamericas

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 **Salud Ecuador**  
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"En septiembre de este año, #Ecuador alcanzó la calificación de la @opsoms como #EMT nivel 2 y célula especializada quirúrgica, una acción que demuestra el compromiso de @Salud\_Ec", @GinaTambini #EMT #EMTamericas

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 **jorge soria**  
@bodysawer

Simuladores de realidad virtual #EMTamericas #EMTecuador2017 @pahoemergencias

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# Report on the Objectives of the Meeting

With respect to *establishing a regional agenda for the implementation of the EMT initiative through a strategic debate among the Member States and EMT-providing organizations on alignment of coordination, preparation of teams' challenges in response operations, and regional and national initiatives*, five (5) objectives were defined for the II Regional Meeting of EMTs in the Americas:

1. Present developments in implementation of the EMT Initiative at the global, regional, and national levels;
2. Consolidate best practices for the preparation and recruitment of EMTs;
3. Develop regional capacities by promoting minimum standards and requirements for EMT operations during emergency response;
4. Strengthen coordination, deployment, and operations during emergency response;
5. Identify regional and national priorities to promote the agenda for implementation of the EMT Initiative in 2018-2019.

The methods used to achieve these objectives were established as follows:

- Keynote address: Sets the framework for the events and agenda.
- Discussion panels: Discussion of topics of regional interest by a group of experts, followed by a question-and-answer session.
- Plenary information sessions: Introduction to specific subjects to be discussed by the working groups.

- Group work sessions: Collaborative work on tasks for review, reflection, and planning of specific topics of regional implementation of the EMT Initiative.
- Country experience presentations: Aimed at creating a framework for implementation through knowledge exchange and systematization of lessons learned.
- Open discussion: Open forum for mutual in-depth reflection, comprehension, and clarification on key topics pertaining to the EMT Initiative in the Region.

The results achieved on these objectives will be described in this chapter.

## 1. Present developments in the implementation of the EMT Initiative at the global, regional, and national levels

### Implementation of the EMT Initiative in the Americas

The Region of the Americas, in which the Pan American Health Organization (PAHO) operates, is made up of 49 Member States and Territories, which are exposed to a wide variety of emergencies and disasters of increasing scale and frequency. It is estimated that, between 2011 and 2016, around 20% of all natural disasters worldwide occurred in this Region, affecting more than 67 million people. Emerging public health threats, such as the Zika virus epidemic to which more than 500 million people were exposed in Latin America and the Caribbean, represent new challenges for public health and require a broader scope of preparedness and response.

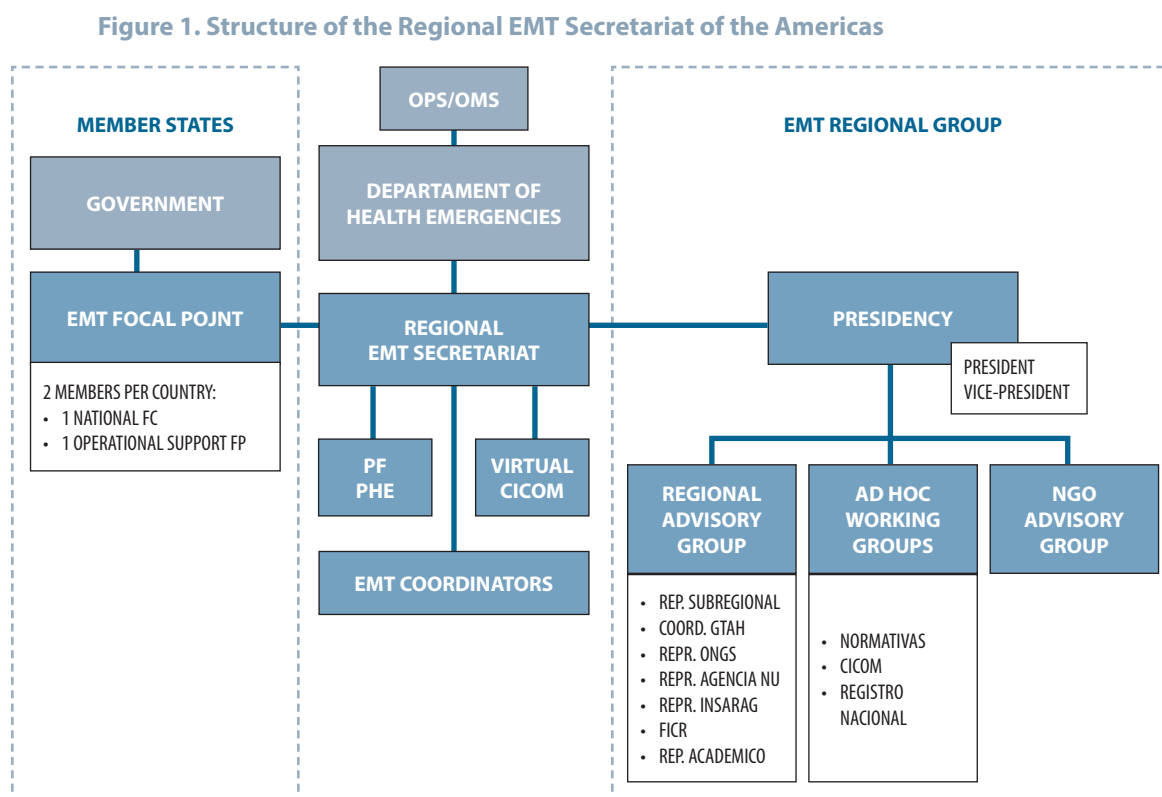
In 2014, the 53rd Directing Council of PAHO, made up of the Ministers of Health of the Member States, established and approved the “Plan of Action for the Coordination of Humanitarian Assistance” in the Americas, which sets out implementation of response procedures and flexible national registration mechanisms for Emergency Medical Teams in the Member States. The 55th Directing Council subsequently approved the “Plan of Action for Disaster Risk Reduction 2016-2021”, which urges the Member States to strengthen national-level efforts to develop and update the knowledge and procedures of emergency and disaster response teams. Both resolutions constitute the framework on which the Emergency Medical Teams (EMT) initiative and PAHO’s national-level capacity-building for risk reduction and disaster response are based.

The framework for regional implementation of the EMT Initiative in the Americas has been completed in 2017. The Regional EMT Secretariat worked on creation of this implementation framework. In January 2017 it was shared with the Member States, which then made recommendations and contributions which were included in the document and validated in the final version. Currently, the Ministry of Health of Ecuador is the chair of the Regional Group, and 23 countries of the Americas have designated focal points.

The Regional EMT Secretariat of the Americas is supported by two structures:

1. The EMT Regional Group, which includes the regional presidency, the advisory committee, the ad hoc working groups, and the NGO advisory group.
2. The focal points network of the Member States, with focal and operational points who serve as references for implementation within the country.

Figure 1 illustrates the structure – created and approved by the focal points and Regional Group – for the Regional EMT Secretariat of the Americas.



Activities carried out periodically by the Regional Secretariat in 2017 included national workshops to introduce the initiative, as well as 2-day sessions on flexible coordination tools and mechanisms, which have met the goal of providing support and information so that Member States can develop their own national workshops. To date, 17 national workshops have been held in 17 countries<sup>2</sup>.

The training of EMT coordinators also achieved its dual objective of training personnel in EMT coordination at the regional level and ensuring that EMT coordinators are able to

<sup>2</sup> Argentina, Bolivia, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Venezuela.

support the implementation process in their respective countries. To date, three editions of the Regional Course for EMT Coordinators have been held, in Panama (2015), Costa Rica (2016), and Chile (2017), for a roster of 78 EMT coordinators from 23 countries. Additionally, in 2017, a special edition of the coordinators' workshop was carried out in Trinidad and Tobago for the whole of the English-speaking Caribbean, which included the participation of representatives from 23 Caribbean nations and territories.<sup>3</sup>

The Region of the Americas, which has led implementation of this initiative, hosted the I Regional and Global Meeting in Panama in 2015. During the II Regional Meeting, held in Quito from November 27 to 29, the regional agenda for implementation of the EMT Initiative was defined through a strategic debate among the Member States and EMT-providing organizations on the alignment of coordination, preparation of teams challenges faced in response operations, and regional and national initiatives.

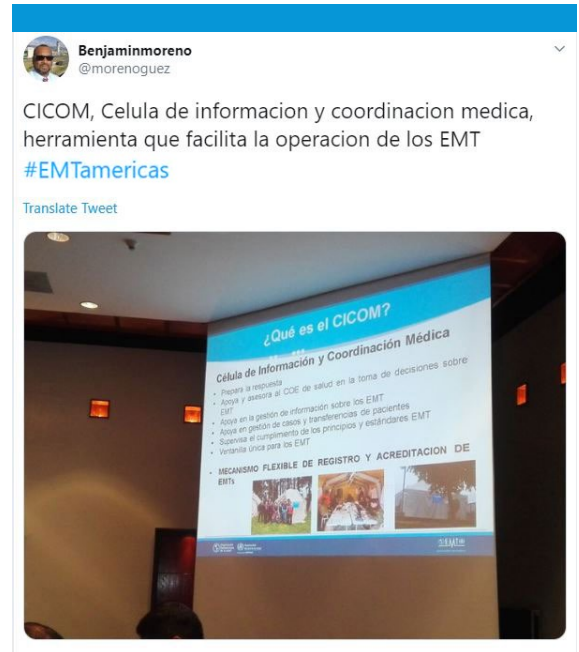
Regarding mechanisms for coordination, five countries are currently implementing national procedures to request and deploy EMTs, as well as working on implementation of CICOMs with support from PAHO: Chile, Costa Rica, Colombia, Ecuador, and Peru. CICOM is a tool affiliated with the Health EOC of each country and designed to facilitate handling of information, as well as deployment and coordination of EMTs, to ensure continuity of clinical care during emergencies and disasters. This tool was activated for the first time in 2016 during response to the earthquake in Ecuador, which resulted in efficient coordination among 28 national EMTs and five international EMTs (from Colombia, Germany, Peru, Spain, and the United States) deployed to the most affected areas.

Finally, among the advances achieved by the EMT Initiative in the Americas, one stands out: the global classification of the national EMTs of Costa Rica and Ecuador, which successfully met the international standards established by WHO. Costa Rica has achieved Classified status for a fixed Type 1 EMT affiliated with the Costa Rican Social Security Fund. Ecuador, in turn, classified three of its teams as Type 2 EMTs with a specialized surgical cell. During 2018, more national teams that are currently adapting their EMTs to WHO's international standards and participating in mentoring are expected to reach Classified status. In this sense, it bears stressing that, during the II Regional Meeting, the Member States of the Americas urged teams to not only conform to global classification, but to promote a cycle of continuous improvement and technical training so that these teams can work as national EMTs as well.

<sup>3</sup> Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, the British Virgin Islands, the Cayman Islands, Dominica, Granada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, and the United States.

In 2018-2019, the Region will continue its progress toward a full rollout of the EMT Initiative, consolidating itself as the world's leading region in implementation. The work plan approved for the Region of the Americas consists of the following key points:

1. Establish a national and regional mechanism for registration of EMTs:
  - Establish regional and national mechanisms to facilitate the registration, mobilization, and operation of EMTs during health emergencies;
  - Establish and maintain an operational list of EMT coordinators and national experts for health response teams.
2. Establish a Regional Advisory Group for EMTs in the Americas:
  - Establish groups and committees for the Regional EMT Group of the Americas, with representatives from each subregion;
  - Convene and take part in regional and international forums and networks about the EMT Initiative in the Americas.
3. Boost and strengthen implementation of the EMT Initiative in the Americas:
  - Host coordination and capacity-building workshops with EMTs and national focal points;
  - Develop and implement model procedures for receiving and providing international health assistance;
  - Conduct drills to strengthen the coordination of humanitarian assistance between response teams and EMTs.
4. Strengthen the integration of CICOM with national mechanisms for coordination and management of Health EOCs as an essential function to ensure continuity of care during emergencies:
  - Develop guidelines and standards for the establishment and operation of national CICOMs during health emergencies;
  - Provide technical guidance to countries for the establishment and management of national CICOMs;
  - Develop, update, and maintain the Virtual CICOM tool.



*CICOM  
presentation during  
Regional Meeting*

## The EMT Initiative: A global approach for saving lives during emergencies

Currently, the EMT Initiative is being implemented globally with the priority of agreeing on a common strategy that will allow us to fulfill our mission: *To reduce loss of life and prevent long-term disability as a result of sudden disasters, epidemics, and/or other emergencies, through rapid deployment and efficient allocation of EMTs which adhere to internationally accepted minimum standards.* This strategy focuses on the promotion and creation of platforms, mechanisms, policies, and tools necessary to achieve the defined objectives.

For each of the 5 objectives of the EMT Initiative, the Global Secretariat is working on specific recommendations that will help meet the strategic priorities that have been identified:

### **Objective 1: Agree on standards, collect best practices and procedures, and create a knowledge platform:**

1. Update the “Blue Book”:
  - a. Update the contents of the Blue Book, taking into account the potential need to add new chapters, and identify specific technical or coordination elements that should be highlighted.
  - b. Proposed a timetable for the revision, during which recommendations will be received to maximize the contributions of countries, organizations, and teams.
2. Complete the Coordination Handbook, which is currently undergoing translation, consultation (use in capacity-building exercises) and final adjustments.
3. Create a “Toolkit” for EMTs: A draft version is being developed, which will be revised in concert with the “Blue Book” and published online.
4. Continued development of technical standards: Develop and/or update reference materials for EMTs, including the publications *Management of limb injuries during disasters and conflicts*, *Minimum technical standards and recommendations for rehabilitation*, and a daily report form for deployed EMTs. These publications are currently available in English only (translations pending).

## **Objective 2: Improvement/quality control and classification of Emergency Medical Teams:**

1. Manage the EMT mentoring and classification process for international teams, including an increase in the number of mentors at the global and regional levels.
2. Foster the establishment of national EMT accreditation processes. Toward this end, a working group is expected to be established in 2018 to develop a general framework for national accreditation of EMTs, based on the principles and standards of the Global EMT Initiative, which will be applicable to government and non-government teams.



*EMT classification  
Ecuador*

## **Objective 3: Capacities and capacity-building:**

1. Increase the capacity of national authorities to activate and coordinate response by national and international EMTs through national and regional workshops, as well as through EMT coordination courses.
2. Promote capacity-building in national EMTs, using specifically designed virtual tools for continuing education, such as the National EMT Training of Trainers Course.
3. Create support and training mechanisms for the regional and international roster of EMT coordinators.
4. Train international teams in activation and coordination procedures.
5. Ensure that partners and different stakeholders become familiar with EMT coordination mechanisms.



*EMT classification  
Costa Rica*

## **Objective 4: Response activation and coordination:**

1. Lead or support as necessary.
2. Document and share lessons learned during responses.
3. Use support tools such as spreadsheets, MDS-type reports, Virtual CICOM, Virtual OSSOC, etc.

### **Objective 5: Participation and ownership – a sustainable network:**

1. Consolidate a network based on each member taking ownership and adhering to a common methodology and language. Toward this end, promote:
  - a. Consolidation of regional groups;
  - b. Assignment of EMT focal points;
  - c. Global consistency (SAG);
  - d. Political support;
  - e. Global and regional secretariats.

### **The experience of the countries of the Americas: Implementing the EMT Initiative at the national level**



#### ***1. Argentina***

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On March 8, 2015, Argentina established and started operation of a Technical Group composed of the Ministries of Health, Defense, Security, Social Development, Foreign Affairs, and Religion, with support from the PAHO Representative Office in Argentina. Through the work of this Technical Group, a protocol was designed to offer, request, and activate EMTs. Currently, at the national level, these protocols are activated under the authority of the National Comprehensive Risk Management System (SINAGIR) (National Law 27287).

During 2017, Argentina carried out a number of activities nationwide to promote implementation of the EMT Initiative and strengthen response capacities, which included workshops and interagency meetings:

- Monthly meetings of the Inter-ministerial Technical Group on Type 2 EMT formation.
- National Workshop for the Coordination of EMTs in Emergency and Disaster Response, Buenos Aires, March 2017.
- Presentation of the EMT program to Health Regions for the establishment of Type 1 Teams. Buenos Aires, May 2017.
- Workshop on health logistics and CICOM. Salta and Jujuy, September and October 2017.
- 1st National Course on Operational Support and Health logistics for EMT Deployment. Buenos Aires, October 2017.
- Design of the National EMT Registry.



- National CICOM Workshop, December 11-12, 2017.
- Participation in the regional logistics workshop held in Costa Rica in September 2017.
- Participation in the coordinators' course held in Chile in October 2017.
- Participation in the Regional Workshop on Surgical Care in Austere Conditions, Lima, November 2017.

This same year, Argentina deployed its EMTs within a joint health response operation of the National Comprehensive Risk Management System to Morillo, province of Salta, Northwest Region. On this occasion, 1,442 patients were treated and 10 emergency transfers were performed.

As part of its resource map, the country is working on regionalization of the initiative, under the leadership of the Ministry of Health, together with the medical components of the Ministries of Defense and Security. The mission is to adapt international tools at the national level through Health Emergency Committees (*Comités de Emergencias Sanitarias*, CES), which are units that coordinate, regulate, implement, and plan activities and resources in emergency and disaster situations in the provinces that constitute each regional level. Within this system, Type 1 EMTs operate at the regional level and Type 2 EMTs at the national level; both are articulated through the Inter-ministerial EMT Group, with technical support from PAHO.

In 2018, Argentina plans to hold the 2nd National Logistics Workshop and the 1st National Workshop on surgical management in austere conditions and start CICOM implementation at the national level.

## 2. Brazil

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With a population of over 200 million, Brazil has a universal, publicly funded Unified Health System, which is free at the point of care and characterized by its decentralized management, focus on providing comprehensive care (prioritizing preventive activities without detriment to curative ones), and promotion of community involvement.

Within this system, the objective of the Vigidesastres program is to develop a set of activities to be adopted on an ongoing basis by the public health authorities to reduce exposure to disaster risk in the general population and among health professionals; reduce the morbidity burden resulting from disasters; and mitigate damage to health infrastructure. Within the framework of the Vigidesastres program, the country has developed a risk management model with three cornerstones: risk reduction (prevention, mitigation, and preparedness), emergency and disaster management (alert and response), and recovery (rehabilitation and reconstruction). Organization and guidance of the health sector for disaster prevention, preparedness, and response is carried out through State Committees for Disaster Health (*Comitês Estaduais de Saúde em Desastres*, CESD) and Strategic Information and Response Centers for Health Surveillance (*Centros de Informações Estratégicas em Vigilância em Saúde*, CIEVS).



Achievements have included the creation of contingency plans for care in public health emergencies, as well as the standardization of medicine kits and strategic supplies for disaster relief (20 kits are permanently assembled and available). Brazil's response teams are made up of health professionals, volunteers, and medical facility managers, with a minimum staff of 1 physician, 1 nurse, and 2 nursing technicians, as well as mobile hospitals with advanced life support and intensive care capabilities for treatment and stabilization.

In November 2017, Brazil designated 2 national focal points for the EMT Initiative (operational and national). Currently, the country is working on a diagnosis of Unified Health System and FN-SUS (*Força Nacional do SUS*) regulations that can support the Brazilian government's decision to join the EMT Initiative. Also, an assessment is underway of tools, regulations, and policies that can be adapted for the registration and operation of national EMTs within the Unified Health System framework. The first training activities for EMTs in Brazil are scheduled to take place in 2018, with the support of PAHO.



### 3. Chile

Through 2017, Chile worked on creating regulations or procedures for requesting and deploying EMTs. As a result, the country now has procedures in place to activate national EMTs. It has begun to develop procedures with an emphasis on requesting and receiving international EMTs, involving customs officials, medical professionals, the Office for Cooperation and International Affairs (OCAI), and the Institute of Public Health (ISP), among others.

Also in 2017, Chile carried out its first exercise in CICOM capacity-building; the role of CICOM at the national level was defined as a tool to advise and support the Health EOC at the national and local levels. In country, the CICOM operates in 3 stages:

- Stage I: Data analysis, including capacities and supply, as well as activation of EMTs.
- Stage II: Receiving and setting up international EMTs and their operations.
- Stage III: Decommissioning, accountability, and transfers.

Between September 22 and 26, 2015, the SIMEX-INSARAG Simulation Exercise was held in Santiago, Chile, organized by the National Emergency Office of Chile (ONEMI) and the Chilean Fire Department, in coordination with the Office for the Coordination of Humanitarian Affairs (OCHA), through the International Search and Rescue Advisory Group (INSARAG). The national teams that participated included members of the Health EOC, as well as authorities and representatives from the national level. International EMTs that participated in this exercise included teams from Argentina, Cuba, Spain, Costa Rica, and Peru.

Regarding Chile's resource map, the following achievements are worthy of note:

- Dissemination of the strategy at the national level and joint work with the Armed Forces;
- 900 staff members trained through e-learning (300 in 2016 and 600 in 2017);

- 20 health facilities trained in EMT courses through training workshops in 2016 and 2017;
- Supporting documents have been developed to insert the EMT Initiative within the available resources of the health sector;
- National EMTs were deployed several times in Chile in 2016 and 2017.

During 2018, Chile will work on reaching of an agreement with the Ministry of Defense for EMT preparedness and response, make draft documents official in the form of resolutions, implement E-learning to train human resources, carry out training of trainers for EMT workshops, and develop a logistics workshop for EMTs.

#### 4. Colombia

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In Colombia, the EMT Initiative is being implemented within preparedness and integrated response program that includes emergency preparedness and strengthening of response capacity. Colombia has four technical documents to support emergency preparedness on the subjects of: health standards for Colombia's humanitarian assistance; technical guidelines for health management and preparedness for events involving mass movement of people; hospital guidelines for disaster risk prevention (Ministry of Health and Social Protection); and proposed guidelines for the creation and operation of health teams for disaster response. Colombia also hosted the SIMEX-INSARAG regional exercise of simulated earthquake response, carried out in Bogotá on September 26-30, 2016. Regarding response capacity, implementation of the Safe Hospitals program is a noteworthy achievement.

In June 2017, the municipality of Mocoa, department of Putumayo, suffered severe landslides and floods which left 398 injured and 332 dead, with significant economic losses and infrastructure damage. As part of the response, resources, transportation, and supplies were mobilized, with permanent coordination at the national and local levels through the Health EOC and CICOM. To support the growing demand for health services in the affected communities, the national EMTs of the Armed Forces, National Police, Colombian Red Cross, Colombian Civil Air Patrol, María Luisa de Moreno Foundation, and EPS, among others, were deployed. The national EMTs played an important role in providing comprehensive care in shelters and responding to outbreaks and epidemics.

One lesson learned by the Colombian government within the framework of implementing this initiative is the value of national EMTs not only during emergencies, but also as a preventive measure during major events. Two examples that highlight this utility are the visit of Pope Francis to Colombia and the Peace Process. The first was an event attended by approximately 4 million people, during which 5,000 support staff and 247 ambulances were deployed at 200 stations. In total, 1,964 patient encounters and 96 transfers were recorded. During the Peace Process, the high concentrations of demobilized personnel in difficult-to-reach areas revealed a need to deploy personnel to ensure comprehensive health care in the demobilization zones.



Colombia is now working on addressing the main challenges of EMT program implementation. These challenges include: harmonizing the EMT program with the Safe Hospitals program, harmonizing bimodal teams (contingency teams, PHC-EMT1), ensuring nationwide coverage, obtaining national registration and authorization of EMTs, strengthening capacities, and securing funding to ensure sustainability.



## 5. Costa Rica

The Ministry of Foreign Affairs and Worship, in coordination with the National Emergencies Commission, is the managing authority for both output (deployment of Costa Rican cooperation) and input (any international cooperation the country might need to receive). To coordinate these efforts, the 2011 *Manual de procedimientos de Cancillería para la Coordinación de la Asistencia Humanitaria y Técnica en Casos de Desastre* [*Manual of Foreign Ministry Procedures for the Coordination of Humanitarian and Technical Assistance in Case of Disasters*] serves as the framework for agile, effective coordination of international humanitarian assistance. Implementation of the EMT initiative is adapted to this procedure at the national level whenever requesting or deploying an EMT.

Likewise, the 2017 *Guía Técnica Nacional para la Implementación de la Célula de Información y Coordinación Médica (CICOM) de los EMTs de Costa Rica* [National Technical Guideline for Implementation of the Costa Rican EMT Medical Information and Coordination Cell (CICOM)] is undergoing revisions to ensure that responsibility for coordinating the request, deployment, and reception of national and international EMTs rests with CICOM.

Seeking to strengthen national capacity, in 2017, the Costa Rican Social Security Fund (*Caja Costarricense de Seguro Social*, CCSS) provided training opportunities and support to the health services network of its WHO-classified Type 1 EMT. Examples included deployment to Ciudad Neilly, Zona Sur (June 2017), and deployment for the provision of medical care in the Caribbean zone (October 2017). Likewise, CCSS/CAED officials have participated as facilitators in regional and sub-regional training exercises, and were part of the verification team for the Type 2 EMT certification process in Ecuador. It should be noted that Costa Rica hosted the II Regional EMT Coordinators Course, held in August 2016, and the Regional EMT Operational Support Course held in June 2017.

Costa Rica also has practical experience in deployment of its national EMT during emergencies, such as the deployment to Upala in November 2016 in response to Hurricane Otto. In October 2017, mobile Type 1 EMTs were deployed in response to Tropical Storm Nate.

The national priorities for 2018 are the consolidation of a specialized surgical care unit and formalization of the technical guideline for CICOM implementation.

## 6. Cuba

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Cuba has the Henry Reeve International Contingent of Physicians Specialized in Disaster Situations and Serious Epidemics, which was established on September 19, 2005. These all-volunteer brigades are set up in all 16 provinces of the country, and most members have previous experience in other international missions. The brigades are deployed 24 and 48 hours after the health event.

With the consent of the affected country and according to the origin and magnitude of the disaster, Cuba activates its national procedure for mobilization of emergency medical brigades, considering the following criteria: the type of brigade to be deployed is selected, based on the characteristics of the disaster; the necessary medicines and supplies are organized to ensure provision of care for a minimum of 30 days; and, finally, the brigades are deployed with the means to ensure their self-sufficiency and survival for 30 days, including water, food, hygiene supplies, undergarments, and others.

Noteworthy achievements and capacity-building exercises in 2017 included:

- Updated structure and composition of national EMTs;
- Implementation of two national workshops for the heads of medical brigades expected to respond at the national level to a massive earthquake;
- Implementation of a workshop on management of dead bodies in mass casualty events with heads of teams and other authorities;
- Participation of National Emergency Brigades in training activities held in Chile and Colombia.

Due to several events of great public health impact that occurred both in the Caribbean and worldwide, Cuba participated in disaster response in 2017, deploying 4 medical brigades: to Peru in response to floods and heavy rains (23 team members), to Dominica in response to the effects of Hurricane Maria (42 team members), to Mexico in support of earthquake response (40 team members), and to Sierra Leone in response to landslides (10 team members). The last brigade is still active, at the request of the health authorities of Sierra Leone.

These brigades treated 49,439 patients, 8,736 of which in the field; performed 172 surgical operations (including 129 major surgeries); 11,370 nursing procedures; and 23,275 educational activities aimed at promotion and prevention to mitigate the risk of outbreaks of infectious diseases.

During 2018, Cuba plans to evaluate the composition of its health brigades so they will meet the standards of the EMT Initiative and can achieve global Classification status. Likewise, it has requested the establishment and socialization of team composition and structure, medical equipment, instruments, and supplies as needed to standardize its national EMTs.



## 7. Ecuador

In 2016, the members of the Ecuador EMT received their first training, with PAHO support, only a few days before an earthquake struck on April 16. This training made it easier to apply EMT response standards after the earthquake while, at the same time, incorporating coordination tools to medical teams. In the months following the event, the Ministry continued to adopt WHO standards for personnel, logistics issues, processes, and guidelines at the national level, which ultimately secured international recognition as Emergency Medical Teams.

On March 31, 2017, at the 10th Meeting of Ministers of Health of the South American Health Council (CSS) of UNASUR, the Minister of Public Health of Ecuador, Dr. María Verónica Espinosa, presented the “Declaration on Minimum Standards of Emergency Medical Teams (EMTs)”, which encouraged the Member States of UNASUR to create and update national policies or mechanisms to support this type of international assistance and allow implementation of the EMT Initiative. The commitment also included development of a national mechanism for the classification and registration of national and international EMTs; the establishment of customs, migratory, jurisdictional, logistical, and administrative procedures for the entry, transit, stay, and departure of EMTs and their medicines, devices and supplies, among others.

From July 2016 to September 2017, Ecuador made progress toward obtaining WHO global Classification status. This process included the definition of preparatory measures, strengthening of human resources, and strengthening, development, and further building of response capacities. The classification process was supported by the development of supporting documentation, such as the 2017 “Response by Type 2 EMTs of the Ministry of Public Health of Ecuador” manual, and supplemented by the design of simplified protocols which take into account the roles of the Ministry of Foreign Relations and Human Mobility, the Ecuador Customs Service (SENAE), the Ministry of the Interior, the Ministry of National Defense, and the Risk Management Secretariat.

Between September 13 and 15, 2017, an international PAHO/WHO mission with experts from Costa Rica, the United States, and Peru verified compliance with minimum EMT standards. The experts reviewed process documentation, standards and guidelines for patient care, administrative and logistical processes, and EMT activation, deployment, and deactivation protocols. In Guayaquil, they evaluated Mobile Hospitals 1 and 2 and a surgical unit.

As a result, on September 26, 2017, the emergency medical team of the Ministry of Public Health of Ecuador became the second in the region of the Americas to receive WHO verification as part of the EMT Initiative. The Ecuador team is the first in the region of the Americas to receive this recognition for two Type 2 EMTs and a specialized surgical cell, which implies, among other things, that it is able to deploy a field hospital, in addition to providing care.

## 9. Mexico

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In the event of emergencies and disasters, Mexico has a government channel to request or offer humanitarian support from any agency of other countries through the Secretariat of Foreign Affairs/AMEXCID. Within this Secretariat, the decision to request medical support rests with the National Committee for Health Security. Recently, the need for a thorough review by all members of the Health Sector of regulations or procedures to request/send EMTs within the country has been discussed.

In 2017, Mexico responded to emergencies caused by earthquakes in the states of Oaxaca (September 7) and Morelos (September 19), including deployment of EMTs to the affected areas. Mexico has Type 1, 2, and 3 EMTs, and their main challenge is to standardize the processes and requirements that these units must fulfill within the EMT Initiative, both globally and at the federal and state levels.

Currently, the resource map for Prehospital Emergency Medical Services and EMTs is being constructed by request to the Technical Subcommittee on Monitoring and Evaluation of the National Committee for Health Security. The resource map is being made at two levels: at the state level, with health facilities, and at the federal level, with the institutions that make up the health sector.

For 2018, Mexico has set itself the goal of integrating the resource map into public health policies in the field of medical attention. A massive disaster response drill with EMTs is also being considered, as part of a series of activities in observance of the September 19 earthquakes of 1985 and 2017.

## 10. Panama

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In 2017, Panama completed the Activation Manual for the Health EOC, which sets out the steps to be followed in case when requesting or deploying an EMT at the national level. Topics addressed include standardized first response procedures (ambulances and helicopters), setting up the primary post, support teams for higher-complexity facilities, and deployment of advanced resources.

Overall, the EMT Initiative in Panama has the political backing necessary for efficient implementation. Implementation is an inter-agency process, led by the health sector through the Ministry of Health, as well as CSS Panama and 911 Medical Emergencies. The initiative is also being implemented with the support of the National Naval Aviation Service, the National Police, the Institutional Protection Service, the National Border Service, Civil Protection, the Fire Department, and the Panamanian Red Cross.

In 2017, the first interdisciplinary medical meeting was held, where the national coordinating team was ratified and coordinators were selected for the medical, surgical, logistics, CICOM, mental health, and nursing sections within the framework of the EMT Initiative.





## *11. Perú*

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The Ministry of Health has approved a technical document for a health contingency plan in the event of a large-scale earthquake in Metropolitan Lima and the Lima and Callao regions. A technical document for the implementation of national EMTs was also developed, which included a 6-month evaluation of health brigades. One of the most interesting findings of this evaluation is the interaction and integration of brigades and agencies, which constitutes the country's main challenge for implementation of the EMT Initiative.

A budget for the EMT Initiative, approved by ministerial resolution, has been included in Peru's 2017-2021 risk reduction plan for earthquakes. Currently, the country has 2,669 first responders operating in brigades at the national level, but the biggest challenge is that only 30% are doctors. The operational capacity of EMTs in Peru is supported by coordination between SAMU and DIGERD, whose objectives are rescue and first response/basic life support.

Regarding response logistics, Peru has seven mobile hospitals currently active in high-risk areas, and three in reserve. These mobile hospitals are ceded by the Ministry of Health to affected regions and run by the Ministry or the regional government. Mobile hospitals are currently active in the Piura, Huarvey-Ancash, Lambayeque, and Andoas regions, which are difficult to reach and beset by social conflicts. Regulations for the operation of mobile hospitals have recently considered a change in mandate to expand their coverage to itinerant care in Peru, including a detailed checklist of requirements for implementation; regionalization has been identified as the main challenge.

Peru has worked on strengthening human resources through capacity building. To date, 6 surgical EMTs have been trained, the equipment available in the country has been reviewed, and Health EOC staff have been trained on CICOM issues.

In 2018, Peru will continue to work on implementation of the 2017-2021 disaster risk reduction plan by establishing and strengthening Type 2 and 3 EMTs to supplement its existing health brigades. Likewise, it will seek to improve the selection of specialized medical human resources and risk management insurance for health personnel. Finally, directives are being developed to guide management of field hospitals at the central level and begin their regionalization.



## 2. Consolidate best practices for the preparation and readiness of Emergency Medical Teams

During the meeting, key points about self-sufficiency were discussed in an interactive format. The moderator posed questions to the participants, who started the debate, followed by questions and remarks from the audience.

### 1. Overcoming readiness challenges

During the meeting, challenges that directly affect the readiness of EMTs were discussed and identified in a series of components: personnel, supply management, deployment, and training standards. Participants had the opportunity to discuss these issues and identify key areas where further guidance is needed. As a result, a set of the resources and best practices that have been useful for overcoming these challenges by regional EMTs was compiled.

#### **First challenge: *Sufficiently trained staff***

Maintaining an up-to-date roster of trained personnel available for deployment is one of the main challenges facing EMTs in the Americas. Recruitment of volunteers and professionals is not always done through up-to-date rosters, and information required for deployment is often incomplete. Online platforms for registration of volunteer and professional staff are limited.

At the time of deployment, health personnel face new obstacles, including insufficient funding, overtime payments, union relations, as well as limited health, malpractice, and civil liability insurance coverage. One possible solution was the management of insurance through countries' Ministries of Health, or coverage by humanitarian crisis status.

#### **Second challenge: *Supply management***

Expiration dates, transport logistics, and receiving-country regulations were identified as the key challenges for supply management. In the most recent emergencies, EMTs in the Americas have encountered difficulties in the management of controlled substances, as well as limited private transportation, reducing the capacity to provide health care to affected communities.

#### **Third challenge: *Deployment***

Deployment presents its own risks and challenges, which, if not addressed in a timely manner, can jeopardize the intention to respond. During the regional meeting, particular attention was paid to understanding the customs systems and immigration requirements of receiving countries, as well as the regulations and public policies of the receiving governments. However, beyond understanding and compliance of these regulations by EMTs, it is important to ensure



*Panel on  
self-sufficiency*

that countries have the political will and legislation in place to clearly determine regulations for the deployment of humanitarian assistance – and, specifically, EMTs – in times of crisis.

Once an EMT has arrived at its destination country, it is important to establish and maintain contact with local leaders at the deployment site. Coordination with national authorities has proven to be key to successful deployment and to ensure local security.

Maintaining operations during deployment requires achieving and maintaining an adequate level of funding and sustainability so as not to impose an additional burden on the affected country. It is important to involve countries themselves as well as organizations and donors that support the initiative to strengthen and maintain such capacity.

Even if the deployment challenges outlined above have been reviewed and mitigating actions have been proposed, the unique characteristics of each emergency remains the greatest challenge. The distinct realities of each country mean that each deployment must be different according to each disaster and emergency, and, consequently, a degree of uncertainty must always be expected.

#### **Fourth challenge: *Standards for classification***

Member States and other EMT-providing organizations are working to strengthen the current capabilities of their national EMTs so that they are aligned with global EMT standards. Although logistical capacity may be somewhat flexible for those who respond at the national level as compared to those who deploy internationally, clinical care standards must remain the same for everyone.

#### ***Areas in which the EMTs of the Americas require greater guidance***

- Requirements and procedures for establishing an EMT;
- Use of pre-established EMT and SOP (standardized operating procedure) models;
- Technical documents necessary for EMT accreditation in the languages of the Region;
- How to reconcile minimum standards with the particular needs of each country or region;
- How to follow the example of other countries that are implementing the initiative;
- Lists of essential medicines and medical equipment, specifying type and quantity;
- Advice on insurance (malpractice, health, and civil liability);
- Logistics.

### *Tools used by the EMTs of the Americas to address these challenges*

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- National and international cooperation and political backing;
- Prior experience and training from other countries;
- PAHO support and technical cooperation;
- Agreements with suppliers of medicines and medical supplies, established 24-72 hours prior to deployment, for the supply of standardized lists;
- Personnel databases and qualifications.

### *Tools that could be useful in overcoming regional challenges*

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- Reviewing, updating, and, subsequently, disseminating documents, standards, and procedures;
- Establishing national and international computer systems which update continuously (i.e., epidemiological profile, vulnerability, type of disaster) and link with the systems of other relevant institutions (Customs, Ministries of Foreign Affairs);
- Databases for personnel selection and background control;
- Training workshops and efficient information systems;
- Establishing an efficient supply management system and partnerships with private companies, NGOs, or governments to secure supplies;
- Communication at the regional level for adaptation of media and languages;
- Establish a unified clinical practice guideline platform that makes it possible to follow a single model;
- Have standards published by countries to allow identification of gaps among countries;
- Multinational, multidisciplinary, and multicultural simulations.

## **2. Water supply**

All EMTs must carry drinking water treatment and access systems, which must be flexible enough to adapt to the different circumstances that may arise during missions. This can range from receiving drinking water in tanks for storage and use (where both quality analysis and safe storage would have to be ensured), to purifying surface water or water from nearby sources (which would require pumping, pre-treatment, and purification, followed by storage and distribution to the various EMT facilities as needed), ensuring at all times the water is not contaminated and that it can be used for drinking and hospital use. This entails several treatment steps. Multiple systems and options are available for this process, depending on the capacity and budget of the EMT; these range

from flocculation to reverse osmosis, ultraviolet irradiation, and ultrafiltration to ensure that the treated water meets minimum quality standards. Calculation of water demand will also determine how purification should be approached with one system or another.

Calculation of water demand should follow WHO standards,<sup>4</sup> augmented by Sphere project guidelines<sup>5</sup> and whichever interpretation of quality each team wishes to provide. Table 1 presents an example of water demand calculated by the Spanish Technical Aid Response Team (START) team on the basis of analysis of water consumption by its Type 2 EMT, taking into account that production capacity is sufficient and the sanitation system will consist of pour-flush toilets (which require approximately 5 L water per use):

**Table 1 Estimation of water demand – START Type 2 EMT  
(Esfera/PAHO Standard)**

Type of use	Users quantity	Amount per day	Total liters
Drinking water	100 outpatients	5 liters per patient per day = 500 liters per day	7,000
	20 inpatients	100 liters per patient per day = 2.000 liters per day	
	50 medical personnel	60 liters per personnel per day = 300 liters per day	
	15 surgical procedures	100 liters per procedure per day = 1.500 liters per day	
Hand-washing stations	200 users	1-2 liters per user per day = 2.000 liters per day	2,000
Toilets	200 users	5 liters per user per day for flushing= 1.000 liters per day	1,000
Showers	70 users	20 liters per shower per day = 1.400 liters per day	1,400
Kitchen	70 users	10 liters per user per day = 1.000 liters per day	700
Cleaning	22 restrooms	5 liters per cubicle per day for cleaning = 110 liters per day	2,110
		Provision for cleaning facilities = 2.000 liters per day	
<b>TOTAL</b>			<b>14,210 liters per day</b>

- Team member 60 liters / day
- Outpatients 5 liters / day
- Hospitalized patient 40 liters / day
- Surgical case 100 liters / intervention

<sup>4</sup> Logistical Support to FMTs. In: *Classification and Minimum Standards for Foreign Medical Teams in Sudden Onset Disasters* ("The Blue Book"). p. 84. Geneva: WHO; 2013. [http://www.who.int/water\\_sanitation\\_health/emergencies/WHO\\_TN\\_09\\_How\\_much\\_water\\_is\\_needed.pdf?ua=1](http://www.who.int/water_sanitation_health/emergencies/WHO_TN_09_How_much_water_is_needed.pdf?ua=1)

Water, Engineering, and Development Centre (WEDC). WHO technical notes on drinking-water, sanitation and hygiene in emergencies, 2011 [cited 2012 2 November].

<sup>5</sup> *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response*. Available from: <http://www.sphereproject.org/handbook/>

### 3. Sanitation

The core tenet here is that teams must also be flexible when it comes to sanitation solutions. A mobile Type 1 EMT must ensure sanitation for its team at the base camp and when going into communities. Sanitation solutions for patients at outpatient clinics can be considered, but in many cases, when an EMT travels to a community, it will use the sanitation system that is regularly available to the community. In this context, mobile sanitation solutions for teams include portable chemical toilets or individual bags containing a chemical solution that convert both liquid and solid waste into common waste. These are effective, but quite expensive. Simple latrines can be used at base camp, as long as their quality is assured and measures are taken to reduce environmental impact.

In the case of a fixed Type 1 EMT, consideration must also be given to patients who will present to the hospital during its open hours; sanitation solutions should provide for their needs as well. Several solutions are available, from portable chemical toilets (for instance, if the emergency has occurred in the Team's own country, destruction has not been very significant, cleaning/waste collection are still a possibility, and deployment time is limited) to latrines as a semi-permanent solution.

Type 2 EMTs must take many more elements into account but hewing to the same idea of flexibility and adaptability to the different conditions that may be encountered during field hospital deployment. The first element to consider is that they will have many more patients than an Type 1 EMT, and everyone will have sanitation needs. At least 100 outpatients should be expected (along with people accompanying them), 20 inpatients (not all of them will be able to use the facilities) and people accompanying them, and, finally, personnel. Second, a gender perspective must be considered (this can and should be supported) and bathrooms may need to be adapted accordingly, if the EMT so decides (this is not mandatory, but is recommended). In addition, the reduced mobility of some patients (both outpatients and inpatients) must be considered. Finally, the method to be used should be appropriate to the context. The same criteria can be followed as for an Type 1 EMT in terms of the systems to be used, from chemical toilets to latrines.

#### 4. Waste management

This is an especially important issue in an EMT, because of the amount and variety of waste generated. Medical waste must be separated and disposed of in accordance with international guidelines on waste management/disposal. Within the structure of the field hospital, there should be a specific area for management of the different wastes generated by activity of the EMT. It is recommended that waste be sorted as follows:

**Table 2. Sorting of waste generated by EMTs**

Type of waste	Container color and markings	Type of container
Infectious, pathological, and anatomical waste	Red, biohazard symbol	Leak-proof plastic bag or container
Highly infectious waste (not sharps)	Yellow, labeled "HIGHLY INFECTIOUS", biohazard symbol	Strong, leak-proof plastic bag or autoclavable container
Sharps	Yellow, labeled "SHARPS", biohazard symbol	Puncture-proof container
Chemical and pharmaceutical waste	Brown, labeled with the appropriate danger symbol	Plastic bag or rigid container
General health waste	Black	Plastic bag
Organic waste	Green	Plastic bag

On waste management issues, it is important to rely on the support of the national authorities as far as possible, so that waste collection and disposal can proceed as is usually done for waste from the national health system. But, once again, following the principle of self-sufficiency, EMTs must be prepared to carry out comprehensive management of all wastes produced by the field hospital. The following stages must be taken into account:

- Use of suitable containers for each type of waste;
- Waste sorting/separation by type;
- Secure system for waste collection and transport to the EMT's storage site;
- Emptying and cleaning of containers;
- Safe storage and/or destruction of waste.

Several different systems, with different cost profiles, are available for the process of waste destruction; from the incineration system proposed by Ecuador (100% self-made by the logistics team and based on a crude oil drum) to the more expensive and sophisticated incineration system presented by Spain to the waste compaction system recently acquired by Costa Rica.

## 5. Fuel and electric power (consumption and EMT zones)

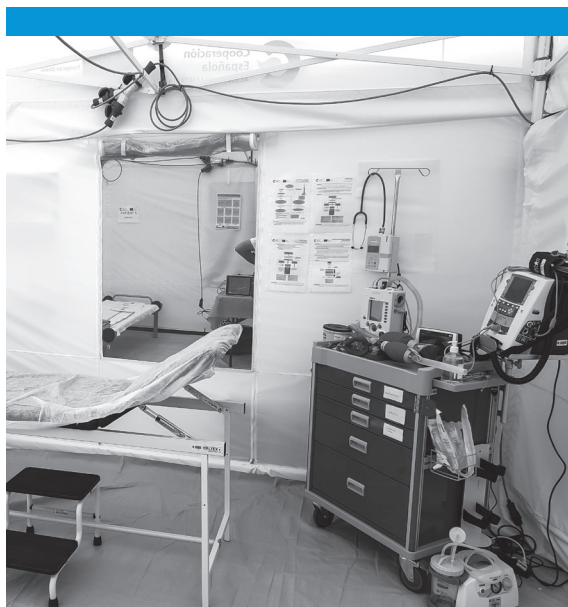
Combining the answers to the two preceding questions, electricity consumption and fuel consumption go hand in hand. Different systems are available for each type of EMT, from the lowest consumption (Type 1 EMT that requires only lighting and some limited equipment and has no air-conditioning systems) up to the level of Costa Rica, which has climate-control capacity for all EMT facilities, from treatment tents to staff living quarters. It is essential to know how much electricity will be needed, in order to design each zone and select the necessary components (connectors, panels, cables and wiring by type, safety, and distance to generators). Furthermore, not only baseline consumption but the possibility of surges or peaks in consumption must also be considered. At certain specific times of day, such as when EMT clinical facilities are operating at full capacity and some essential services (such as a water treatment plant, air conditioning, and high-power machinery) are also running, power consumption can peak. Regarding high-power machinery, the surges in power consumption that can be produced by X-ray machines or autoclaves must be taken into particular account. All of these factors must be considered when deciding on an electricity generation system and the fuel consumption thereof. Likewise, a fallback or backup system must be available in case the main system fails, including several generators, of different capacities if possible, to ensure that mission-critical sections of the EMT, i.e., those that must never run out of power (emergency ward, operating room, sterilization facility, etc.), are always online.

Concerning fuel, the first step is to ensure a supply system in the field, as it is difficult and expensive to be self-sufficient in this regard. In nearly all deployments, both international and domestic, fuel supply is provided on site. Therefore, economic and administrative mechanisms must be in place for EMTs to obtain the necessary systems (including security measures) for proper fuel storage.

## 6. Medicines and consumables

This is unquestionably the greatest challenge faced by EMTs in terms of self-sufficiency, although the experience of previous deployments can help provide reliable information on this issue. During the meeting, some ideas were proposed to calculate not only what should be carried by EMTs at each level, but also how much of each supply should be carried. Once again, flexibility at the time of proposing deployment is key. A more trauma-oriented mission, where the main focus of care is likely to be a large number of casualties with injuries, fractures, polytrauma, etc., will be vastly different from a more public health-oriented mission, in which a wider range of more common medical conditions will be treated. Within this context, medicines and consumables can be organized into three groups of supplies:

- Equipment and inventory items that will presumably return;
- Medicines per se (with special attention paid to controlled and cold-chain-dependent substances);
- Consumables (IV fluids, gauze pads, oropharyngeal airways, etc.)



*Medication cart  
in EMT*

Formulas based on the Blue Book standards are helpful, but should be supplemented by other, common sense-based calculations. The following example is based on SURGICAL CARE provided by a Type 2 EMT:

A Type 2 EMT must have the capacity to perform 15 minor surgeries or 7 major surgeries per day. If we calculate the initial peak demand in a trauma-based emergency (e.g. an earthquake) as 10 major surgeries a day in the first 14 days of deployment, we will need medicines, psychotropics, consumables (scrubs, etc.), disposables, cleaning materials, etc., for 140 surgeries. We can then calculate how many personnel may participate in each procedure, as well as the average amount of medicines and materials consumed in each procedure, to ascertain the necessary supply.

Several alternatives were proposed, all highlighting the importance of flexible adaptation to each situation, but also calling for restrained use of consumables and supplies by team members. All personnel in each section of an EMT must be aware of how expensive it is to mobilize

and deploy each supply or consumable to the site of the emergency, and that rational use of resources will ensure greater sustainability and cost-effectiveness.

Finally, PAHO/WHO was urged to develop minimum standards for consumables and medicines for each type of EMT to serve as a “basic list” for teams with no previous experience.

### 3. Develop regional capacities by promoting minimum standards and requirements for EMT operations during emergency response: updating clinical care

#### *1. Dialysis.*

A standard definition is required for care of acute dialysis needs during disasters. To arrive at such a definition, the complexity of events in prior disasters must first be recognized, as well as the opportunities to provide effective clinical care to dialysis-dependent patients affected by disasters. In general, the goal is to prevent dialysis and reduce complications. Depending on the type of disaster, dialysis will be needed for crush injuries, acute kidney injury of various etiologies (including infection and dehydration), and acute-on-chronic renal failure. The base population that requires this type of treatment includes those with end-stage renal disease, those on peritoneal dialysis, and those with chronic kidney disease.

The renal management team should ideally be made up of a nephrologist, a hemodialysis nurse, a peritoneal dialysis nurse, pediatricians, internists, a vascular surgeon, a nursing technician, a WASH engineer, a logistics technician, a security officer, and a team leader. Essential elements



for dialysis include water, sanitation, electric power, the dialysis machine itself, and special supplies as needed.

In the context of the most recent experience, the deployment of a specialized dialysis cell in response to Hurricane Maria in Dominica, developing a specific skillset for renal care was identified as being key to effective and efficient care.

The amount of water that might be needed to facilitate hemodialysis during such an emergency was estimated as follows:

Dialysate flow rate (DFR), mL/min	= 600
Optimal treatment duration	= 4 hours
Total water needed per session	= 144 L
Total including 10% lost/discarded	= 158 L
Total for 20 patients/day × 14 days	= ~38,000 L

### ***1.1. Pre-deployment preparation and readiness***

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Prior to deployment of the specialized dialysis cell to Dominica, the EMT conducted a needs assessment based on the information obtained through communications with PAHO and Virtual OSOCC, supplementing information gaps with the experience gained during the response to Hurricane Matthew. The team was equipped for 2 weeks of self-sufficiency, including security, shelter, communications, food, a water purification system, and personal health supplies.

### ***1.2. Best practices identified***

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Work was divided into two teams, with the second arriving to relieve the first after 2 weeks of operations. Both teams participated actively in coordination meetings, which facilitated work during the most critical weeks of the emergency. In addition to these meetings, the teams benefited from communication with other medical specialties and NGOs that responded to the emergency, achieving integrated management of the most common complications. Regarding medical care, the team focused on standardization of dialysis care through PPE, clinical management, and available guidelines. Standardization made it possible to treat an average of 20 patients per day, train health personnel and patients on critical issues to meet the needs of the target population and implement dialysis rounds.

### ***1.3. Challenges identified***

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The challenges identified were due to causes directly or not directly related to the nature of the disaster. Challenges directly related to the disaster included the unavailability of laboratory facilities, medical complications, illnesses related to lack of water/food or infections, a

greater number of patients versus a limited number of resources, and loss of documentation. Challenges not directly associated with the disaster included a lack of local nephrologists and vascular surgeons, lack of vascular access in certain patients, and lack of specialized training for support staff.

## 2. Surgery

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The process of surgical care during emergencies begins during the first response provided by the USAR team to the patient, or patient arrival to the EMT facility, and continues through the stabilization and transfer phases on to definitive treatment and ends with the rehabilitation phase. For EMTs, 90% of the overall burden of surgical care is related to management of injuries to extremities. In this sense, surgical teams must be prepared to take care of patients from triage through to definitive care, following protocols to work with what means are available and prevent secondary damage, considering the different curative possibilities of each EMT type.

EMTs with operating rooms must have sufficient space, protocols, supplies, and equipment to ensure satisfactory OR management, including support services: physical space and equipment, circulation, clothing, cleaning, sterilization, waste management, airflow, electrical power, etc. In this sense, it is essential that EMTs follow evidence-based protocols, since their work is carried out under austere conditions and in the absence of a local hospital-based support infrastructure. Moreover, given that EMTs can only mobilize a limited number of human and physical resources, the use of evidence-based protocols helps minimize the possibility of postoperative complications while ensuring greater benefits to the team and patients, reducing secondary damage and preventing malpractice.

During the regional workshop on surgical care in austere conditions, held in Lima, Peru, the following evidence-based practices were identified and discussed:

- **Patient:** The patient and surgical site should be prepared, taking three factors into account: the patient's skin, the providers' skin, and the surgical field, considering general perioperative care.
- **Airflow in the operating room:** It is essential to control the direction and characteristics of the air circulating in the operating room. "Sterilizing" the air in the operating room (with ultraviolet light or "ultraclean" air systems) has no influence on surgical infection rates. Air entry into the operating room of a Type 3 EMT must be preceded by an adequate filtration process, which should retain 30% in the first filter and 90% in the second filter (99.97% for a HEPA system). Air must flow from the ceiling in a vertical direction toward the floor and flow out at floor level, since the vast majority of particulate matter is located at lower levels. The operating room should be under positive pressure, and ventilation systems should ensure at least 15 air changes per hour.
- **Restricted circulation:** Comparative studies between non-restrictive and restrictive systems have shown that decreasing the circulation of personnel by establishing

specific circulation corridors reduces bacterial colony counts. However, this has no impact on infection rates. This may be due to the fact that the environment is not the main source of microorganisms involved in surgical infections. These findings are compounded by the fact that increased contamination of the floors of the operating theater does not contribute much to contamination of the circulating air or health personnel, which are the main sources of external microorganisms. As the circulation of personnel does not contribute significantly to the transfer of microorganisms from the floor to the air and/or to the personnel themselves, the use of shoe covers does not seem to be justified except to protect providers' personal footwear, rather than to avoid environmental contamination. Increased movement of personnel near the surgical field, however, does increase the number of microorganisms in said area. It is thus essential to limit circulation within the operating room. Consequently, it is important that all of the necessary supplies be available in the room before starting surgery.

- **Cleaning of contaminated rooms and patients:** Several studies have shown that strict cleaning of operating room floors and walls reduces the number of microorganisms, but only temporarily; 2 hours after cleaning, bacterial counts are the same as before. These publications conclude that routine disinfection of OR a floor is not an epidemiologically justifiable practice, nor is its cost/benefit ratio significant.
- **Equipment and supplies:** OR equipment can be used in other areas of the hospital, and vice versa, without increased risk of infection. There is no evidence that masks and shoe covers have any impact on surgical infection rates. It is recommended that powder-free gloves be worn and changed systematically every 2 hours of surgery or when torn or pierced, whichever comes first. To ensure rational use of medicines, antibiotic prophylaxis should be administered within 120 minutes prior to the incision and should not be extended for more than 24 hours postoperatively. All dirty clothes and linens should be bagged and labeled inside the operating room before transfer.
- **Waste:** Waste incineration has long been a widespread practice, but if it is incomplete or if unsuitable materials are incinerated, pollutants and residual ash are released into the atmosphere. If chlorinated products are incinerated, they can release dioxins and furans, substances that are carcinogenic to humans and have been associated with various health effects. The incineration of heavy metals or products with high metal content (particularly lead, mercury, and cadmium) can disseminate toxic metals into the environment. Only modern incinerators that operate at temperatures between 850 and 1100°C and have a special flue-gas cleaning system can meet international emissions standards for dioxins and furans. There are now alternative solutions to incineration, such as autoclaving or microwave sterilization, steam treatment combined with agitation of treated materials, or chemical treatment

### 3. Basic radiology for EMTs



*EMT type 2  
radiology area*

The best location for the X-ray area is near the emergency, resuscitation, and inpatient wards. The chosen location and arrangement should facilitate good climate control to ensure that radiological equipment is in good working order.

The minimum requirements of radiology equipment to ensure proper deployment in emergency scenarios where EMTs operate include being portable, lightweight, high-frequency (HF: 120kv/60MA), having a protective case or container, be versatile and readily positioned over the region of interest, and have a radiation beam range of 5 m.

The X-ray booth should be modular and transportable, made of composite aluminum with 1.5 mm-thick lead shielding. The shield itself can be 1.5 m wide by 2 m tall, and the dimensions of the booth should be approximately 4.5 m wide by 4.5 m long by 2 m tall. Entry into the

X-ray booth must always be controlled, and a radiation warning sign must be present.

### 4. Blood transfusion

Blood transfusion during emergency response operations is indicated in the event of Grade III and IV hemorrhagic shock, in hemostatic resuscitation, in damage control surgery, in exchange transfusion, and in patients requiring red blood cell transfusion when red blood cell concentrates are not available. In this context, blood transfusion is contraindicated in patients with chronic anemia and in patients requiring massive transfusion of stored blood.

Blood obtained by EMTs during the deployment must meet the following quality standards: no separation from its components when extracted; addition of a preservative and anticoagulant solution (CPDA); and no further processing. Whole blood must be collected, screened, and processed to the following standards:

- Content: Hct 35-44%, Hb 12.5 g/dL, stable clotting factors and plasma proteins.
- Volume: 63 mL (for a 450-510 mL unit)
- Storage: no longer than 10 days at a temperature range of 1°C to 6°C.

## 4. Strengthen coordination, deployment, and operations during emergency response

### 1. Considerations and regulations for EMT deployment

After the devastating 2010 earthquake in Haiti, the health cluster estimated that 420 organizations were participating in response in the country as of December 2010. Despite this massive influx of international organizations deployed to provide assistance, they had little involvement with national organizations, local authorities, and civil society, leading in some cases to duplication of efforts and parallel structures.

Until recently, there was a lack of agreement on minimum standards and supervisory mechanisms. Both situations led to a major problem during emergency operations: How to handle a significant but unknown number of international actors traveling and deploying locally, often ignoring the government's decision not to request assistance, as well as improvised, poorly prepared and/or poorly equipped medical teams, and even outright incompetent medical teams.

At the national level, if the host country takes no formal position as to requesting and accepting EMTs, this may be interpreted as tacit approval for their deployment. That is why governments must specify under which conditions EMTs will be accepted, if at all, and what will happen if the entry of certain teams is unwanted or deemed unacceptable. Only the authorities of the affected country have the legal capacity and mandate to accept or reject EMTs. No international organization, regardless of its technical or operational quality, can effectively replace local authorities.

At the international level, there are a number of treaties, resolutions, codes, and models seeking to regulate the provision of international disaster relief. However, this international regulatory framework also has its shortcomings. First, some of the relevant treaties have few signatory parties and, therefore, a limited geographical scope. Many other treaties only address one type of disaster or one type of international actor (usually only states). More importantly, there is a lack of awareness of existing instruments, and they are not used to the extent that would be expected.

In 2007, the 30th International Conference of the Red Cross and Red Crescent adopted, by consensus, a new series of "Guidelines for the domestic facilitation and regulation of international disaster relief and initial recovery assistance" (also known as the IDRL Guidelines). The IDRL Guidelines are not binding. They are global in scope, relevant for state and non-state actors, for all response sectors, and for all types of disasters (except armed conflicts). They serve as recommendations to governments on how to prepare national legal frameworks for international disaster assistance, to avoid the most common problems and facilitate the rapid delivery of relief and assistance for the initial recovery of those affected by natural disasters. The IDRL Guidelines also recommend that the granting of any package of legal facilities



*EMT Tipo 2  
MSP Ecuador*

must be conditional upon compliance with the eligibility requirements established by the affected recipient state, as well as adherence to minimum humanitarian standards.

In this sense, the eligibility of EMTs is to be determined using the international classification system, based on minimum standards, with a view to improving the quality of medical response. However, national registration mechanisms need to be established within countries to make it easier for governments to monitor the continuing obligation of EMTs to comply with these standards.

The most common regulatory issues faced by EMTs are:

- Bottlenecks: Activation, visas, customs, taxes, special equipment, professional qualifications, registration, transportation, legal liability.
- Lack of regulation: Inappropriate assistance, violation of standards, lack of coordination.
- Consequences: Delays, costs, loss of trust, less effective assistance.
- Complex problems of today: Large quantities of medicines that are inappropriate, illegal in the affected country, labeled in foreign languages, or past the expiration date.

### *Pre-deployment considerations*

Ideally, the decision to offer or request EMTs should be based on evidence that provide an understanding of the scenario as quickly as possible, e.g., identify needs for clinical care, ascertain the capacity of the existing health services, and detect gaps in care that must be bridged. However, the great heterogeneity of criteria makes optimal decision-making difficult. In any case, EMTs must meet the following criteria before deploying to an affected country:

1. Respect national decisions to accept EMTs. Always wait for formal request by the affected State.
2. Before offering to deploy, consider the factors that influence acceptance of EMTs, such as prior experience during similar events, institutional sources of trust, and capacity for mass casualties.
3. Adhere to the minimum guiding principles and standards for EMTs defined by PAHO/WHO.
4. Make preparations to facilitate rapid deployment, including:
  - a. Do not mobilize until the offer is accepted by the national authorities.
  - b. Carry the required documentation (professional licenses, visas, etc.).
  - c. Have essential customs information ready to ensure clearance of medicines, equipment, and supplies the EMT needs to operate.

## *Considerations during deployment and medical care*

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In all countries, the medical profession is subject to general licensing as well as specific accreditation of medical specialties. Unfortunately, some humanitarian teams are in a legal gray area in terms of their medical practice and responsibility. Few countries have taken legal steps to provide temporary licenses or adopt a positive legal interpretation of the laws: New Zealand (2011) and Japan (2011), for example, granted access to carefully selected partners for whom the risk of negligence was considered acceptably small. In Nepal (2015), the normal process for international health personnel to obtain a temporary license from the Medical Council of Nepal was suspended, and the Ministry of Health and Population required health technicians to simply present a copy of their passport together with a copy of their professional medical license. Through this process, team members were granted a temporary license to work as health professionals for 30 days (renewable upon request), if and only if they practiced medicine within their EMT and in line with their training.

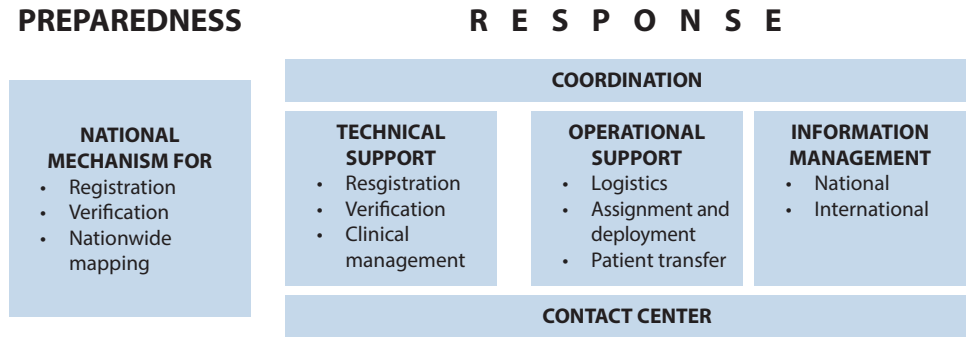
Other important considerations during the deployment and medical practice in an affected country include going through customs and immigration procedures, in which involvement of the local authorities is required for expedited clearance. It is also important to establish an entry register with prior accreditation, consideration of logistical aspects that ensure complete self-sufficiency, and the carry of professional accreditation licenses.

## **2. National mechanisms for EMT registration**

The Medical Information and Coordination Cell (CICOM) supports the Health EOC on decision-making to ensure the provision of clinical care and an efficient response by EMTs, facilitates management of information on EMTs, simplifies case management and patient transfers, and monitors compliance with EMT principles and standards. The CICOM also had the additional role of a flexible national mechanism for registration of national EMTs.

CICOM roles and functions within the Health EOC are organized around the phases of health sector preparedness and response to emergencies and disasters. During the preparedness phase, CICOM registers, verifies, and carries out a nationwide mapping of EMTs. When responding to emergencies and disasters, CICOM takes on the role of a contact center, which facilitates coordination through technical support, operations support, and information management. Figure 2 illustrates these roles and their organizational structures:

**Figure 2. CICOM roles and structure**



When implementing a CICOM at a Health EOC, it is important to set the mandate that will establish it as a flexible mechanism for EMT coordination and registration. This mandate is executed through supporting regulations, structures with set roles and functions, a roster of professionals, standardized procedures, infrastructure, and resources. Once implemented, the CICOM life cycle begins with the preparedness phase, followed by activation, operations, and transition, and ends with the demobilization phase. The CICOM life cycle begins anew once EMT demobilization has been completed.

The value added by CICOM during the preparedness stage lies in the fact that the registration process allows identification of the specific capabilities of national EMTs and of the resources available to ensure clinical care. This translates into a more timely and efficient response while improving coordination mechanisms, strengthening information management for decision-making, and facilitating support of international EMTs.

**3. Ensuring a comprehensive response: from the disaster zone to proper medical facilities**

During the Haiti earthquake, multiple problems were encountered during clinical care of the victims, starting when they were found in the rubble and continuing throughout the process of extrication, on-site stabilization, and transportation, and persisting even into definitive care. A large number of rescue teams—most of them uncertified and without clearly defined clinical care procedures—had only minimal resources for prehospital care and transportation, and limited infrastructure for patient intake and definitive care. This was compounded by a preexisting lack of coordination in prehospital care, emergency care, and definitive treatment, resulting in discontinuity of care for patients.



In this type of disaster, USAR teams involved in search and rescue operations play a key role in promotion and implementation of the International Search and Rescue Operations Advisory Group (INSARAG) guidelines. These guidelines divide USAR operations into five components, including a medical component, and define the scope of medical interventions: care for the USAR team members themselves and for located victims until their transfer to local health facilities. However, in light of recent emergencies that have required intervention by these teams, a gap has been identified regarding how to ensure a comprehensive response that allows proper transport of rescued victims to the EMT or to the local health facility that is best prepared to meet their medical needs.

In this line, it bears stressing that each country has an existing prehospital care system with which rescue services and EMTs will have to interact to ensure continuity of care. There is no one-size-fits-all formula, as each country's health system is built upon a unique legal framework and has different resources available for transportation, medical care, and coordination. Despite its importance, the role of this system has not been sufficiently visible.

Implementation of the EMT Initiative helps close gaps in clinical care during disaster and emergency response, but simultaneously introduces a new actor into this already complicated scenario. The challenge lies in local, national, and regional initiatives to facilitate organization of the different actors involved in humanitarian health response, with the aim of ensuring a coordinated transition between each of these links in the chain of care.

To overcome the current challenge, two hurdles must be addressed from the coordination and individual points of view. In terms of coordination, the clinical management of USAR medicine, prehospital medicine, and care provided by the EMT and at the definitive hospital must be integrated into a clinical guideline constructed consensually among the three actors involved in the chain of care. Individually, each of these three actors carries out their activities in a completely different field, with different levels of risk, and must thus rely on different equipment, training, and optimal conditions to meet their individual objectives. Complementarity should be sought, rather than one group adapting to take over another's functions. Each country is responsible for implementing and disseminating a protocol for communication and coordination among official structures and the structures made available through international cooperation mechanisms.

## 5. Identify regional and national priorities to promote the agenda of EMT Initiative implementation in 2018-2019.

### 1. Training

- Establish collaborative working groups, with the participation of focal points from the Region, to strengthen Initiative standards and evaluate the benefits obtained.
- Participate in a global review of EMT standards to contribute regional experience and context.
- Develop a tool to facilitate data analysis and sharing of best practices and lessons learned.

### 2. Human Resources

- Maintain and update the roster of EMT coordinators, including inter-institutional teams, and offer continued training to the roster in order to mitigate the hazards of staff turnover.

### 3. Logistics

- Establish mechanisms for bilateral and multilateral cooperation on sending and receiving EMTs.
- Strengthen training in logistics and define logistics coordination standards that cover medicines, equipment, and other key resources necessary during emergency response.

### 4. Considerations for EMT deployment

- Develop mechanisms for temporary validation of licenses and medical insurance in disasters.
- Develop flexible registry mechanisms with criteria for acceptance prior to a disaster.

- Establish a quick-reference repository of individual country requirements, so that EMTs can be up to date on the requirements they need to meet in anticipation of potential deployments. This recommendation requires inter-institutional consensus with other relevant ministries.

## **5. CICOM establishment and management**

- Establish CICOMs within existing national structures by defining roles and responsibilities, SOPs, use of the Virtual CICOM tool, and training.



*Presentation of posters  
during regional meeting*

# Decisions of the Regional Group of the Americas

## 1. Appointment of the Chair, First Vice-Chair, and Second Vice-Chair of the Regional EMT Group of the Americas

During the 2nd Regional Meeting of EMTs in the Americas, Ecuador was appointed as chair of the Regional Group for 2018 by a unanimous vote of the national EMT focal points.

Costa Rica was named First Vice-Chair, and Panama, Second Vice-Chair of the Regional Group.

To date, Ecuador, Costa Rica, and Panama have had their appointments ratified by PAHO.

## 2. Report of the Advisory Group of EMT-Providing NGOs

During the 2nd Regional Meeting of EMTs in the Americas, organizations providing EMTs that are undergoing classification established an NGO Advisory Group under the aegis of the Regional Group. The meeting of the Advisory Group defined a structure, objectives, leadership, logistics, training, personnel, and mentoring to facilitate implementation of its mandate at the regional level.

### a. Structure

The sole criterion for membership in the NGO Advisory Group is to be an organization in the process of obtaining EMT classification. The Group is also open to National Red Cross Societies in the region.

A chair will be appointed for the Advisory Group. This person will coordinate with other sections of the Regional Group to define the roles, reports, and periodicity of meetings expected of the Advisory Group.

## b. Objectives

The work of the NGO Advisory Group is based on 6 objectives defined at the 2nd Regional Meeting:

1. Obtain information to establish a baseline:
  - a. Establish effective communication among NGOs. Initially, contact will be established through commonly used tools such as WhatsApp and Virtual OSOCC.
  - b. Identify the immediate results that are expected of the group.
  - c. Update the list of NGOs participating in the group.
  - d. Establish mechanisms to share tools and establish a regular meeting schedule
2. Define the main objective of the NGO Advisory Group. This objective should become a method for communicating, sharing best practices, and facilitating implementation of documents.
3. Identify the connection and level of participation of the NGO Advisory Group with other NGOs in Latin America and the Caribbean. This objective is proposed because the group is currently constituted of organizations from the United States and Canada alone.
4. Create a mechanism to share information through Google Drive or a similar virtual platform.
5. Establish connections with the health cluster, other NGOs, and Member States.
6. Facilitate initiatives that promote member participation, fundraising, deployment, training, operations, etc.

### *Plenary Regional Meeting*



### **c. Logistics**

Cydney Justman of Direct Relief was named Logistics Focal Point for the NGO Advisory Group.

### **d. Leadership**

Hillary Cranmer of the Massachusetts General Hospital was appointed Coordinator of the NGO Advisory Group.

Cydney Justman of Direct Relief was named Deputy Coordinator and, as noted above, Logistics Focal Point for the NGO Advisory Group.

### **e. Training**

The group will work on identifying courses available free of charge in the Region, and will determine the best practices that make training processes more effective and efficient.

### **f. Personnel**

There was discussion of the possibility of sharing trained personnel among NGOs during emergencies that, due to their nature and context, require medical specialties of limited availability.

However, when analyzing this possibility, it is important to consider the responsibilities and risks to organizations and their personnel when providing personnel for deployment.

The Group reached the conclusion that more information is required, and that this option should be evaluated in light of experiences from past emergencies.

## **7. Information management**

A database of guidelines will be established (e.g., lists of the basic supplies and minimum requirements needed for different contexts).

### 3. Updated List of EMT Focal Points Officially Designated by the Health Authorities of the Americas (up to date as of June 26, 2018)

Country	National Focal Point	Operational Focal Point	PAHO Focal Point
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