

**ASSESSMENT OF THE PAKISTAN
EMERGENCY CARE SYSTEM AND
CONSENSUS-BASED ACTION PRIORITIES
ON 14-15 NOVEMBER, 2017**

EXECUTIVE SUMMARY

Emergency Care System is the gateway of our health system. In the absence of an effective primary health care in Pakistan, emergency rooms may be the first point of contact for many patients with acute illnesses or complications of chronic health problems. Emergency care systems (ECS) address a broader-range of obstetric, medical, surgical issues psychiatric illnesses, road side traffic accident environmental and man-made disaster complications of during pregnancy and post-partum issues, exacerbations of non-communicable diseases (e.g. asthma, heart attacks, strokes), and Acute infections (e.g. sepsis, chikungunya, leishmaniosis, Ebola virus, Congo virus, Malaria, Dengue fever, Chickenpox, Measles, Polio, Tuberculosis, HIV/AIDs are common in low-middle countries along with many other outbreak). The emergency care system is often the first point of contact with the health system, particularly in areas where there are barriers to access. With sound planning and organisation, emergency care systems have the potential to address over half of deaths and a third of disability in low- and middle-income countries.

Given the potential to reduce death and disability in Pakistan through improvements in emergency care, the Ministry of National Health Services Regulation & Coordination of Pakistan, in collaboration with the World Health Organization (WHO) undertook a system-level assessment using the WHO Emergency Care System Assessment (WHO ECSA) tool and organized a working group comprised predominantly of local emergency care experts.

Key stakeholders were asked to complete the WHO ECSA, a survey instrument designed to help policy-makers and planners assess a national emergency care system and identify gaps in order to set priorities for system development. Responses were compiled and a working group was convened on 14-15 November, 2017 to review results and develop consensus-based action priorities. Representatives from the major groups dealing with emergency care in Pakistan were represented, including: Rescue-1122, Amman Foundation-1021, all Provincial focal person, Academia and MoNHSR&C

Pakistan has an advanced emergency care system that fulfils many of the critical functions identified in WHO documents, with services disseminated throughout

the country. Given the many strengths and a high level of government commitment, there is great potential to save lives and address gaps in the quality and timeliness of emergency care delivery with a range of high-impact, low-cost interventions including: improved coordination of services, expansion of dedicated emergency care training for nurses and doctors, especially at lower levels of the system; implementation of standardised clinical charts and data collection for system planning and quality improvement efforts; and implementation of standardised protocols addressing both emergency care process and clinical management.

The specific action priorities proposed by the working group for each component of the emergency care system are listed below, and details of the discussion on each topic are described in the main document.

ACTION PRIORITIES

SYSTEM ORGANISATION AND GOVERNANCE

- ESTABLISH MECHANISMS TO PROTECT FUNDING FOR PH AND FB EMERGENCY CARE SERVICE DELIVERY.
- DEVELOP STRATEGY FOR INTEGRATION OF INJURY PREVENTION EFFORTS INTO EMERGENCY CARE DELIVERY SETTINGS.
- ESTABLISH DESIGNATED DEPARTMENT OR UNIT TO PROVIDE STRATEGIC COORDINATION OF PRE-HOSPITAL AND FACILITY-BASED EMERGENCY CARE AT NATIONAL LEVEL AND PROVINCIAL LEVEL.
- DEVELOP NATIONAL STATUS REPORT ON EMERGENCY CARE, ORGANIZED BY PROVINCE.
- INTEGRATE EXPLICIT LANGUAGE ON PH EMERGENCY CARE INTO NATIONAL HEALTH VISION (WHICH WILL BE REFLECTED IN PROVINCIAL MANDATES).
- INTEGRATE EXPLICIT LANGUAGE ON FACILITY-BASED EMERGENCY CARE INTO NATIONAL HEALTH VISION (WHICH WILL BE REFLECTED IN PROVINCIAL MANDATES)

FINANCING

- ESTABLISH MECHANISMS TO PROTECT FUNDING FOR PH AND FB EMERGENCY CARE SERVICE DELIVERY.
- DEVELOP STRATEGY FOR INTEGRATION OF INJURY PREVENTION EFFORTS INTO EMERGENCY CARE DELIVERY SETTINGS.
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- INTEGRATE EXPLICIT LANGUAGE ON FACILITY-BASED EMERGENCY CARE INTO NATIONAL HEALTH VISION (WHICH WILL BE REFLECTED IN PROVINCIAL MANDATES)

EMERGENCY CARE DATA AND QUALITY IMPROVEMENT

- ESTABLISH SYSTEM-WIDE IMPLEMENTATION OF STANDARDIZED CLINICAL FORMS/SOPS IN EMERGENCY UNITS, INCLUDING STANDARDIZED DATA POINTS AND ALIGNED WITH RELEVANT INDICATORS (E.G., WHO TEMPLATE)
- DEVELOP SIMPLE MECHANISM FOR UTILIZATION OF EMERGENCY CARE DATA BY HOSPITAL AND LOCAL SYSTEM ADMINISTRATORS IN PLANNING AND DECISION-MAKING (LINK WITH NATIONAL STRATEGY ABOVE, INCLUDING PHIS PROCESSES).
- ESTABLISH AT NATIONAL LEVEL VIA MoNHSR&C, MINIMUM STANDARD GUIDANCE ON STANDARDISED CLINICAL FORM FOR USE IN EMERGENCY UNITS BASED ON WHO STANDARDS.
- ESTABLISH AT NATIONAL LEVEL VIA MoNHSR&C, GUIDANCE ON SIMPLE SYSTEM-WIDE QI PROGRAMMES (INCLUDING DEVELOPMENT OF KPI) IN EMERGENCY UNITS (UTILIZING WHO EMERGENCY CARE REGISTRY PLATFORM AS NEEDED) AND FOR PREHOSPITAL CARE.
- DEVELOP COORDINATION MECHANISM AT NATIONAL AND PROVINCIAL LEVEL (IN CONSULTATION WITH TECHNICAL EXPERTS, ACADEMIA, ETC.) FOR AGGREGATION, ANALYSIS, AND UTILISATION OF EC DATA BY POLICYMAKERS (INCLUDING MECHANISM FOR COMMUNICATING BACK TO PROVIDERS AND ADMINISTRATORS ABOUT UTILISATION OF DATA)

SCENE CARE, TRANSPORT AND TRANSFER

- MAP CURRENT PARTNERS AND ACTIVITIES IN FIRST AID TRAINING AND DEVELOP COORDINATED STRATEGY (INCLUDING SETTING STANDARD TRAINING CONTENT, AND STANDARDS FOR FIRST AID KIT).
- CREATE COMMON CERTIFICATION? CONSIDER NATIONAL COORDINATION MECHANISM?
- STANDARDIZE CRITERIA AND PROCESS FOR DESIGNATION OF TRAUMA CENTERS

- IMPROVE/UPDATE IMPLEMENTATION OF OVERSIGHT/ACCREDITATION MECHANISM FOR AMBULANCES (INCLUDING FOR PRIVATE)
- ESTABLISH SINGLE NATIONAL UNIVERSAL ACCESS NUMBER FOR EMERGENCY HEALTHCARE SERVICES
- INITIATE PROCESS TOWARDS ESTABLISHING BYSTANDER PROTECTION LAW AT NATIONAL LEVEL FOR ADAPTATION AT PROVINCIAL LEVEL
- ESTABLISH AT NATIONAL LEVEL VIA MoNHSR&C SYSTEM WIDE GUIDANCE ON STANDARDS AND PROTOCOLS FOR PREHOSPITAL CARE BASED ON INTERNATIONAL STANDARDS (INCLUDING VEHICLE AND EQUIPMENT STANDARDS, CONDITION-SPECIFIC MANAGEMENT, HANDOVER, DESTINATION TRIAGE, AND TRANSPORT PROCESS)
- ESTABLISH AT NATIONAL LEVEL VIA RELEVANT PROFESSIONAL COUNCILS, DEDICATED STANDARDIZED TRAINING AND CERTIFICATION PATHWAY FOR AMBULANCE PROVIDERS (? BASIC AND ADVANCED)
- ESTABLISH AT NATIONAL LEVEL VIA MoNHSR&C, MINIMUM STANDARD GUIDANCE ON CLINICAL AND COMMUNICATION PROTOCOLS TO BETTER COORDINATE INTER-FACILITY EMERGENCY UNIT TRANSFER

FACILITY-BASED CARE

- CONDUCT FACILITY-BASED EMERGENCY CARE DELIVERY ASSESSMENT (WHO EMERGENCY UNIT ASSESSMENT TOOL)
- IMPLEMENT FORMAL EMERGENCY UNIT TRIAGE PROCESS AT EVERY DISTRICT HOSPITAL AND TERTIARY CARE LEVEL (WHO TOOL AVAILABLE)
- IMPLEMENT DEDICATED TRAINING IN BASIC EMERGENCY CARE (WHO BASIC EMERGENCY CARE COURSE) FOR FRONTLINE EMERGENCY CARE PROVIDERS
- ESTABLISH CORE OF DEDICATED NON-ROTATING CLINICAL PERSONNEL AT ALL EMERGENCY UNITS/AREAS AT RHC LEVEL, THQ, DHQ AND TERTIARY CARE LEVEL
- ESTABLISH AT NATIONAL LEVEL VIA MoH, MINIMUM STANDARD GUIDANCE (BASED ON WHO/DCP RECOMMENDATIONS) FOR EMERGENCY UNIT SERVICES BY LEVEL

- ESTABLISH AT NATIONAL LEVEL VIA MOH, MINIMUM STANDARD GUIDANCE FOR EMERGENCY UNIT INFRASTRUCTURE, STAFFING, AND EQUIPMENT & SUPPLIES
- ESTABLISH AT NATIONAL LEVEL VIA MOH, MINIMUM STANDARD GUIDANCE FOR EMERGENCY UNIT PROCESSES (TRIAGE, DISCHARGE, LENGTH OF STAY, HANDOVER, ETC)
- ESTABLISH ADDITIONAL EMERGENCY MEDICINE SPECIALTY TRAINING PROGRAMMES
- INTEGRATE MANDATE FOR DEDICATED EMERGENCY CARE TRAINING INTO UNDERGRADUATE NURSING AND MEDICAL TRAINING CURRICULA
- INSTITUTE REQUIREMENT (VIA RELEVANT PROFESSIONAL COUNCILS) FOR BASIC EMERGENCY CARE TRAINING FOR PROVIDERS WHO WORK IN EMERGENCY UNITS AS A CONDITION FOR ONGOING PRACTICE.
- REVIEW/REVISE/DEVELOP EMERGENCY CARE ELEMENTS IN EXISTING HOSPITAL ACCREDITATION STANDARDS, CREATING MECHANISM FOR ENFORCING AT BOTH PUBLIC AND PRIVATE EMERGENCY UNITS

REHABILITATION

- SET UP A REHABILITATION UNIT UNDER DEPARTMENT OF HEALTH AT THE PROVINCIAL LEVEL (IN FIRST PHASE AT PROVINCIAL & DIVISIONAL LEVEL AND IN SECOND PHASE UP TO DHQ/THQ LEVEL).
- ESTABLISH A MONITORING AND DOCUMENTATION MECHANISM OF REHABILITATION SERVICES AT PROVINCIAL LEVELS.
- CONDUCT REHABILITATION NEEDS ASSESSMENT AT DIFFERENT LEVELS
- INTEGRATE REHABILITATION SERVICES IN PROVINCIAL HEALTH PLANS BASED ON THE 2030 VISION
- ESTABLISH CENTRAL COORDINATION MECHANISM FOR REHABILITATION
- STRENGTHEN THE MANDATE OF THE NATIONAL REHABILITATION INSTITUTE

EMERGENCY AND DISASTER PREPAREDNESS

- Conduct a regular assessment of emergency care system capacity to mobilize resources in case of disasters, outbreaks and large scale-emergencies.
- Strengthen coordinated planning for disaster, outbreaks and other large scale emergencies at national and provincial levels.
- Develop pre-hospital and facilities security plans at all levels of service delivery to protect staff, patients and infrastructure from violence

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LIST OF ABBREVIATIONS

CME	Continuing medical education
ECS	Emergency care systems
ECSA	WHO Emergency Care System Assessment
MoNHSR&C	Ministry of National Health Services Regulation and Coordination
SOPs	Standard operating procedures
WHO	World Health Organization
BHU	Basic Health Unit
RHC	Rural Health Centre
THQ	Tehsil Head Quarter
DHQ	District Head Quarter
KMU	Khyber Medical University
AKU	Agha Khan University
UHS	University of Health Sciences

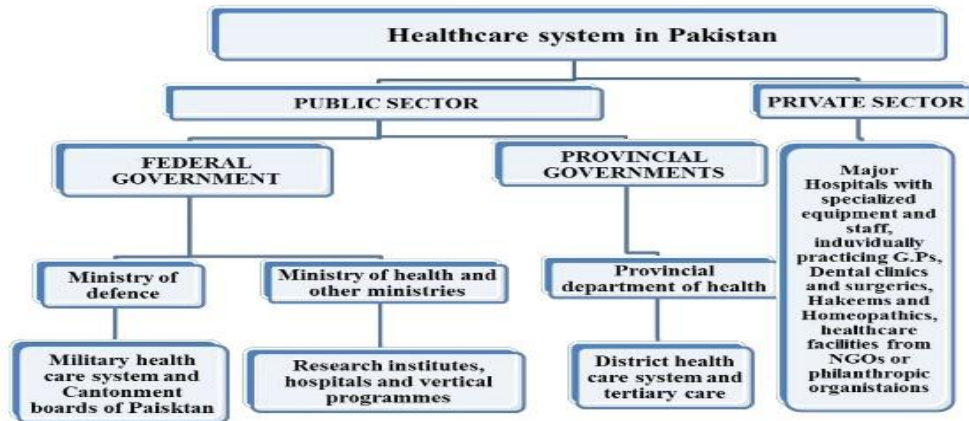
1. INTRODUCTION

Emergency Care System is the gateway of our health system. In the absence of an effective primary health care in Pakistan, emergency rooms may be the first point of contact for many patients with acute illnesses or complications of chronic health problems. Emergency care systems (ECS) address a broader-range of obstetric, medical, surgical issues psychiatric illnesses, road side traffic accident environmental and man-made disaster complications of during pregnancy and post-partum issues, exacerbations of non-communicable diseases (e.g. asthma, heart attacks, strokes), and Acute infections (e.g. sepsis, chikungunya, leishmaniosis, Ebola virus, Congo virus, Malaria, Dengue fever, Chickenpox, Measles, Polio, Tuberculosis, HIV/AIDs are common in low-middle countries along with many other outbreak). The emergency care system is often the first point of contact with the health system, particularly in areas where there are barriers to access. With sound planning and organisation, emergency care systems have the potential to address over half of deaths and a third of disability in low- and middle-income countries.

The well-organized Emergency Care System serve as a safety net for patients without access to general practitioners as well as specialty care, which is more expensive and often difficult to obtain in a non- emergent situation. The after-hour availability of diagnostic services also tends to overwhelm emergency department with low-acuity patients. In all circumstances, emergency health care workers play a very important role in the evaluation of undifferentiated patients, identification and treatment of life threatening conditions as well as appropriate disposition of patients despite of improper stabilization gaps in funding; and insufficient human and physical resources. These gaps lead to failures in the provision of timely and effective emergency care, resulting in substantial preventable death and disability.

2. EMERGENCY CARE IN PAKISTAN

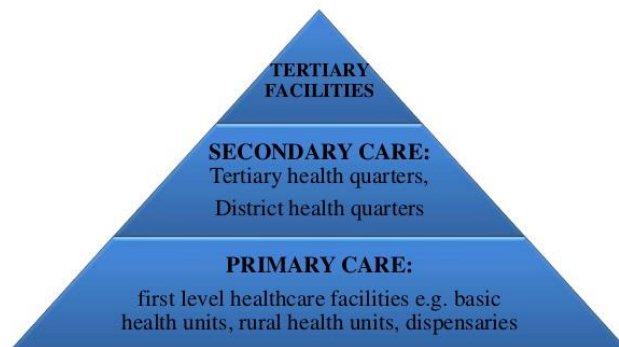
HEALTHCARE SYSTEM: DELIVERY



Standardized emergency care for patients is the need of the hour as most lives were lost in the first 10 minutes of any emergency, be it heart attack, stroke, shock or trauma. In Pakistan, the importance of emergency services is greatly undermined and even in the best of facilities, it is merely an extension of inpatient departments rather than a specialty in itself," these gaps were likely to compromise provisions of quality emergency care. Although There have been dramatic improvements in both prehospital and facility-based emergency care capacity over the last decade merely in one province (Punjab) Pakistan with increasing access, especially in urban areas. Pakistan Red Crescent Society (PRCS), Rescue and many other Non-organizations are to train individuals in the skills needed to save lives in an emergency situation. Pakistan's health care system is a three-tiered health care delivery system: primary, secondary and tertiary care. Health system strengthening mechanism starting at grass roots level, health houses provide community health care services through lady health worker and are connected to basic health units with an upward referral pathway to rural health centers, tehsil hospitals and district hospitals.

There are many challenges and gaps are in Pakistan which categories BHU, RHC, THQ, DHQ in a pyramidal structure from basic primary units to tertiary teaching hospitals what seemed unfortunate, however, is that these facilities did not have the requisite infrastructure to provide care according to recent international guidelines. They also appear not able to fulfil the acute healthcare needs of the catchment populations with persistent challenges in communicable, non-communicable diseases, maternal and child health.

HEALTHCARE SYSTEM: ORGANISATION



3. EMERGENCY CARE SYSTEM ASSESSMENT WORKING GROUP

To reduce the mortality and morbidity is a huge challenge in Pakistan, dedicated potentials skills and through improvements of emergency care, the Ministry of National Health Services Regulation & Coordination, in collaboration with the World Health Organization (WHO), planned to use WHO assessment tool to knowing and assessing emergency and trauma care at all provincial levels of public health facilities in Pakistan; specifically, emergency and trauma care was evaluated from many aspects: (1) pre-hospital Care (2) infrastructure and essential equipment and supplies (3) availability and knowledge of physicians providing emergency care.(4) quality of care

The WHO ECSA is a survey instrument developed to identify and to help policy-makers and stakeholders to assess a National Emergency Care System and to find out challenges and gaps in order to set priorities for proper health system

development. Stakeholders identified by MoNHSR&C and WHO included representatives from Rescue 1122, Amman Foundation 1021, Chippa 1020, Edhi Foundation 115, all Provincial Health Department's focal person and Academia.

Stakeholders were asked to compile the WHO ECSA with the goal of using the findings from the assessment to inform development of action priorities for strengthening the emergency care system in Pakistan. The following ECSA is a survey tool assessing components of a national emergency care system: organisation and governance; financing; emergency care data; quality improvement; scene care; transport and transfer; facility-based care; rehabilitation for emergency conditions; and emergency and disaster preparedness. The first response was on May 25, 2017, and the last response was on November 12, 2017.

Forty-six stakeholders completed the online WHO ECSA; their responses were compiled and the results analysed. The MoNHSR&C held a working group meeting that aimed to: i) Review the WHO ECSA results and establish consensus on divergent responses; ii) identify gaps in the emergency care system; iii) develop consensus-based action priorities; and iii) highlight existing resources and potential implementing partners. The following sections summarise the ECSA results in Pakistan and the associated discussions of the WHO ECSA working group during the workshop. Action priorities are listed together in the executive summary above and are listed by section with discussion highlights below.

4. RESULTS FROM THE WHO ECSA AND DISCUSSION

4.1. SYSTEM ORGANISATION AND GOVERNANCE

There is extremely limited emergency care access across the country, in both rural and urban setting in Pakistan and no comprehensive assessment was done formerly before for evaluation of emergency care system at National Level. Solely one province (Punjab) has well-established emergency care in urban setting, though not well-organised in rural settings. The number and level emergency care facilities and dedicated trauma centres are inadequate and not well distributed for population need overall. Few provinces have trauma centres at the main highway though not functional. Pakistan Government has tools for assessing disaster preparedness, though not for emergency care in general.

There are only one designated office lead agency within the government in Punjab that is responsible for emergency care and has substantial coordination authority, though there remain gaps and challenges in the integration of facility-based emergency care with prehospital and emergency response efforts. Overall, participants felt that central mechanism development to link and coordinate these efforts would be a main priority to improve effectiveness and efficiency of emergency care planning and delivery. In addition, discussants felt that aligning emergency care efforts with ongoing injury prevention initiatives would be important.

There is no clear legislation mandating free access to emergency care in some provinces, including migrants and refugees, and this is consistently enforced. Overall, there is inadequate access to prehospital and facility-based emergency care in both urban and rural settings, Only Rescue 1122 has established trained staff and prehospital services remaining are working as Taxi-service though prehospital services are stretched at peak times, and respondents report significant overcrowding in most urban emergency units to a degree that impacts patient care. In rural settings, especially there are insignificant and scarce facilities. The group estimated that considering the population as a whole, just over half would have access to needed surgical care in a fully-staffed operating theatre within two hours of severe injury or acute illness. The number and level of emergency care facilities is inadequate for population needs overall, gaps are present in distribution and no coordination between facilities and big variation

provinces in Pakistan. No National report for emergency care system for injury, road safety and emergency care.

Emergency care is explicitly listed in national health plans and budgets in Pakistan, and respondents felt that the importance of emergency care is well-recognised by policymakers. Currently, however, there is no national status report on emergency care, and participants from all sectors felt that this would be an important foundation to inform future system development, allowing better utilisation of existing data as well as a coordinated approach to new data collection and planning.

ACTION PRIORITIES

- Establish mechanisms to protect funding for PH and FB emergency care service delivery
- Develop strategy for integration of injury prevention efforts into emergency care delivery settings
- Establish designated department or unit to provide strategic coordination of pre-hospital and facility-based emergency care at national level and provincial level.
- Develop national status report on emergency care, organized by province
- Integrate explicit language on PH emergency care into national health vision (which will be reflected in provincial mandates)
- Integrate explicit language on facility-based emergency care into national health vision (which will be reflected in provincial mandates)

4.2. FINANCING

There are no dedicated funding streams for both pre-hospital and facility-based emergency care services in government budgets, and there is no worker-compensation scheme to pay for care for those who are injured or become ill as a result of condition work. No proper national prehospital service available in Pakistan. Merely one province has been substantial increase in the funding for medicines and there is no universal government-funded national health insurance scheme that covers facility-based and pre-hospital emergency care services. There is no government funded national health insurance scheme in

Pakistan which covers public pre-hospital emergency care services and none for public private facility-based emergency care.

In particular, participants felt that efforts to plan emergency care financing are hindered by a lack of data on the cost and cost-effectiveness of emergency care, and that conducting a cost-effectiveness analysis would greatly assist in advocacy and in improving policymaker understanding of the potential impact of emergency care across a range of high-priority conditions.

ACTION PRIORITIES

- Establish mechanisms to protect funding for PH and FB emergency care service delivery
- Develop strategy for integration of injury prevention efforts into emergency care delivery settings
- Establish designated department or unit to provide strategic coordination of pre-hospital and facility-based emergency care at national level and provincial level.
- Develop national status report on emergency care, organized by province
- Integrate explicit language on PH emergency care into national health vision (which will be reflected in provincial mandates)
- Integrate explicit language on facility-based emergency care into national health vision (which will be reflected in provincial mandates)

4.3. EMERGENCY CARE DATA AND QUALITY IMPROVEMENT

Data on emergency presentations, management, and outcomes are not systematically gathered for use by policy makers for system planning purposes, though merely one province health care delivery data is collected. No proper system for current data collection efforts include some relevant information on emergency care outcomes, and lack of critical information on clinical presentations (especially regarding acuity) and interventions, which would be necessary to inform emergency care quality improvement and planning. Data were collected on road traffic injury rates in few provinces of Pakistan though are

not analysed for trends or areas of need. Overall, key areas for improved data collection would include illness or injury event descriptions, risk factors, clinical presentations (rather than only final hospital diagnoses), acuity, and pre-hospital, emergency unit, and surgical interventions. In addition, discussants felt that a key priority would be to establish a mechanism for better utilisation of emergency data for resource and system planning purposes as well as for facility-based quality improvement.

QUALITY IMPROVEMENT

Data on emergency presentations and management certainly are not documented for clinical purposes in both prehospital and facility-based settings. Solely one province has perfect and standardised clinical charts are utilised successfully in prehospital settings, and there was consensus that standardised clinical charts should be instituted for emergency unit across the country. WHO has a standardised chart template that could serve as a foundation for this initiative?

Isolated quality improvement activities exist in some emergency units, though these are largely limited to injury and are not coordinated across sites. Clinical data are used for quality improvement in some provinces, though only within individual health facilities and corrective strategies are implemented and verified. Quality improvement activities include morbidity and mortality conferences, targeted preventable death panels, educational activities, implementation of guidelines and protocols, and efforts to improve communication in many private hospitals and some public hospitals. Punjab province has 1300 indicator for emergency care. However, these actions are not systematically monitored nor verified to ensure that identified quality gaps are addressed, and it was noted that despite these individual examples, there are no system-wide quality improvement programmes for emergency care and no establish system for yearly clinical and non-clinical audit. Discussants felt that a simple system-wide emergency care quality improvement programme linked to data from standardised clinical charts would be a critical initiative to strengthen emergency care delivery.

There are limited examples of electronic health records used for public health sector emergency care but these are neither widespread nor uniform, however many privates hospital have well-established electronic health record.

Discussants supported the potential expansion of electronic charting and noted the importance of creating modules purpose-designed for the emergency care setting.

ACTION PRIORITIES

- Establish System-wide implementation of standardized clinical forms/SOPs in emergency units, including standardized data points and aligned with relevant indicators (e.g., WHO template)
- Develop simple mechanism for utilization of emergency care data by hospital and local system administrators in planning and decision-making (link with national strategy above, including PHIS processes)
- Establish at national level via MoNHSR&C, minimum standard guidance on standardised clinical form for use in emergency units based on WHO standards.
- Establish at national level via MoNHSR&C, guidance on simple system-wide QI programmes (including development of KPI) in emergency units (utilizing WHO emergency care registry platform as needed) and for prehospital care.
- Develop coordination mechanism at national and provincial level (in consultation with technical experts, academia, etc.) for aggregation, analysis, and utilisation of EC data by policymakers
(Including mechanism for communicating back to providers and administrators about utilisation of data)

4.4. SCENE CARE, TRANSPORT AND TRANSFER

Stakeholders reported that there is a single emergency access telephone number for health emergencies in some provinces i.e. Baluchistan, Punjab, KPK, Gilgat Baltistan (*Rescue 1122*) with full coverage especially in urban areas and good linkage with services throughout above mentioned province additionally Sindh province has three different emergency access telephone number i.e. Aman Foundation-1021, Chhipa Ambulance-1020, Edhi-115, fire brigade Rescue-1299 . There is also legislation that requires fixed and mobile telephone carriers to provide free connection to this emergency access telephone number, and this legislation is enforced. Further, it is estimated that the large majority urban of the population knows and can properly use the emergency access

number by memory however rural population don't have access and many of them, none memories these number eventually, though respondents felt that public education on when to utilise emergency care services could help decrease unnecessary calls and unnecessary visits to emergency units. Overall, respondents estimate that one third of the population has coverage by a formal pre-hospital ambulance system in both urban and rural settings, though response times may increase at peak hours in urban settings and are longer in rural areas where the ambulance available to an extent that impacts care.

There is no automated caller location functionality, and dispatch centres cannot reliably link prehospital providers to receiving facilities for communication, due to limitations of technology at facilities. There is no any kind of laws to protect bystanders who provide help to the actually ill or injured, but there is currently very limited availability of real-time clinical decision support for ambulance providers, with the exception of the control room system(Sindh, Punjab), which could serve as a potential model for expansion to other areas. In general, information about patient presentation, care provided during transport, and immediate clinical care needs is rarely provided to the receiving facility prior to arrival, but there is a systematic handover protocol that is usually followed on arrival. Participants felt that developing automated caller localization and improving field-to-facility communication technology would be critical innovations, in particular to facilitate better clinical decision support for prehospital providers and receiving facility preparation.

Dispatch of public ambulances to the scene is coordinated centrally for both scene response and inter-facility transfer. Private ambulances also provide inter-facility transfer, but are not coordinated by central dispatch, and the group felt that central coordination of public and private dispatch would be helpful for decreasing inter-facility transfer delays.

There are no currently system-wide protocols governing pre-hospital clinical care, and not for destination triage. Discussants report that there are unnecessary delays that impact care when patients are initially taken to facilities that cannot meet their needs and subsequently require transfer. Participants felt that clear system-wide protocols in this area, especially regarding a requirement to confirm facility capacity via dispatchers prior to transport, could improve delivery of patients to the facility best able to provide timely needed care. There is already

an inadequate system of trauma centre (most of the province have trauma centre but not functional) inspection to guide decision-making about initial transport or transfer of injured patients, and there is general consensus amongst dispatchers and providers regarding the capacity of facilities in other areas (e.g., for cardiovascular emergencies and MNCH emergencies).

Stakeholders reported that the number of ambulances is generally adequate to transport patients between facilities, but that the system for transport from the scene is stretched at peak times and would benefit from additional ambulances and/or better distribution of ambulance stations. There is regulation on the use of ambulances, and it covers licensing as well as norms and standards. Many participants were agreed time targets for responding to highest priority emergency calls, and there are efforts underway to decrease response times. There is written act especially in one province (Punjab Rescue-1122) that requires both a driver and a care provider for ambulance transport, and there are equipment standards for ambulances but they run with all kind of protocol which derived from international standards.

There is systematic process for healthcare facilities to communicate with one another regarding transfers, and it is generally used, though not universally in rural areas. There are no specific system-wide protocols on emergency conditions to guide first level facility providers in initial recognition, resuscitation, and transfer of patients, and the decision to transfer is usually based on individual provider judgment although in some urban areas its appropriate system. Discussants felt that systematic condition-specific protocols to support transfer decisions would be a priority, and that review and better dissemination of the guidance addressing communication around transfers could improve the process and reduce delays to advanced care.

There is training and certification of professional prehospital providers in some universities and school of three levels: basic, intermediate and paramedic. It was noted that there is urgent near-term need for expanded numbers of professional prehospital providers.

There neither is some community-based first aid training courses/medical first response trained for para medical staff for lay-people provided by different groups i.e. Rescue-1122, PRC, some universities and school in Pakistan however, these are not widely available nor are they regulated or delivered in

coordinated fashion. Pakistan Red Crescent (PRC) has a training program for volunteer lay (non-medical) ambulance providers who are formally dispatched during disasters, or very occasionally at other times in areas with limited service. The discussion group felt that general community-based training was not a priority and might even cause bystanders to intervene in harmful ways, but felt that targeted training of professional drivers would be valuable to improving timely care.

There is currently no 'Good Samaritan' Law to protect by-standers who provide assistance to the ill or injured, and discussants felt that establishing such a law would be an important priority action.

ACTION PRIORITIES

- Map current partners and activities in first aid training and develop coordinated strategy (including setting standard training content, and standards for first aid kit). Create common certification? Consider national coordination mechanism?
- Standardize criteria and process for designation of trauma centers
- Improve/update implementation of oversight/accreditation mechanism for ambulances (including for private)
- Establish single national universal access number for emergency healthcare services
- Initiate process towards establishing bystander protection law at national level for adaptation at provincial level
- Establish at national level via MoNHSR&C system wide guidance on standards and protocols for prehospital care based on international standards (including vehicle and equipment standards, condition-specific management, handover, destination triage, and transport process)
- Establish at national level via relevant professional councils, dedicated standardized training and certification pathway for ambulance providers (? basic and advanced)
- Establish at national level via MoNHSR&C, minimum standard guidance on clinical and communication protocols to better coordinate inter-facility emergency unit transfer

4.5. FACILITY-BASED CARE

Participants report that, overall, estimated 50% of the urban population and rural population have 24-hour access to facility-based emergency care with no requirement for payment prior to care. Hospitals at all levels generally have emergency units accessible 24 hours per day with staff permanently assigned to the emergency unit, and there is national policy mandating assessment of acutely ill and injured patients prior to registration. In urban areas, emergency units are reliably staffed with emergency specialists, and patients are formally triaged, and usually not seen in order of acuity. In higher volume hospitals (PUNJAB), the Emergency Severity Index is the most commonly used triage tool from DHQ to upward. In first level hospitals (RHC), emergency units are often staffed with generalist doctors, and formal triage is not widely used. Discussants felt that system-wide there is keenly needed to work on standardised triage protocols, and in particular, essential training of nurses' trainers for systematic triage.

While there are skilled emergency care providers on in tertiary care level system, discussants agree that there is a need for MoNHSR&C-developed Standard Operating Procedures (SOPs) addressing appropriate emergency unit staffing ratios and strategies to address crowding. In particular, participants describe a critical gap in qualified emergency nurses and dedicated staff, to identify the need for a coordinated national strategy to address this as a key priority. Overall, crowding emerged as one of the most significant barriers to high-quality emergency care delivery, and participants felt that developing a coordinated national strategy --including systematic assessment, implementation of patient flow protocols, increasing emergency unit beds in high-volume settings, and expanding production of trained emergency nurses-- would be essential across the country.

There are no any kind of nationally agreed upon targets for time to disposition decision and for emergency unit length of stay, and a specific protocol for nursing communication with patients about their disposition or discharge, though this protocol is inconsistently used and has limited support among nursing staff. In addition to condition-specific clinical protocols, the group felt that the system would greatly benefit from system-wide emergency unit process protocols (such as those addressing triage, discharge, crowding, etc.).

Nearly all emergency units have adequate functional equipment for resuscitation across the country; however, at rural first level hospitals, resuscitation equipment may be under-utilized, due to gaps in provider knowledge and training. In tertiary hospitals, stakeholders reported, resuscitation equipment and supplies are consistently available, functional and utilised properly.

There is consistent access to diagnostic laboratory and radiology services in the emergency units of most rural hospitals, and nearly all urban hospitals in three provinces (Punjab, KPK, and Sindh). Equipment is generally well-maintained, supplies are readily available, and interruptions in service are rare and brief.

Doctors and nurses who regularly care for emergency patients are required to have some dedicated training in emergency and trauma care, some universities and school as it is part of undergraduate medical and nursing education, also there are in-service training (continuing medical education) requirements for ongoing certifications. Some providers who care for emergency patients voluntarily take short course trainings, but this is not required. There are accredited specialist training programmes in emergency medicine, anaesthesia, and surgery for doctors, and sub-specialist programmes in critical care and trauma. There are emergency-specific post-graduate courses for nurses, including at the Masters level (KMU, AKU, and UHS)

Screening in the emergency unit is some tertiary care level. Most emergency unit patients are not screened for conditions of public health importance, such as HIV/TB, violence and child maltreatment, or substance abuse. There is occasional screening for diabetes in a few settings.

There is a mechanism for screening patients at time of registration at an emergency unit for highly contagious conditions (eg, Ebola, SARS, MERS, TB, and Cholera) with links to public health officials for case definitions and reporting.

ACTION PRIORITIES

- Conduct facility-based emergency care delivery assessment (WHO Emergency Unit Assessment tool)
- Implement formal emergency unit triage process at every district hospital and tertiary care level (WHO tool available)

- Implement dedicated training in basic emergency care (WHO Basic Emergency Care course) for frontline emergency care providers
- Establish core of dedicated non-rotating clinical personnel at all emergency units/areas at RHC level, THQ, DHQ and Tertiary Care Level
- Establish at national level via MoH, minimum standard guidance (based on WHO/DCP recommendations) for emergency unit services by level
- Establish at national level via MoH, minimum standard guidance for emergency unit infrastructure, staffing, and equipment & supplies
- Establish at national level via MoH, minimum standard guidance for emergency unit processes (triage, discharge, length of stay, handover, etc)
- Establish additional emergency medicine specialty training programmes
- Integrate mandate for dedicated emergency care training into undergraduate nursing and medical training curricula
- Institute requirement (via relevant professional councils) for basic emergency care training for providers who work in emergency units as a condition for ongoing practice.
- Review/revise/develop emergency care elements in existing hospital accreditation standards, creating mechanism for enforcing at both public and private emergency units

4.6. REHABILITATION

Rehabilitation services are included in the care provided in few general hospitals in Pakistan and limited hospitals have dedicated rehabilitation wards or beds. There are some specialist rehabilitation facilities, which are attached with hospitals, physiotherapy is separate department in all tertiary care sectors across the country and there remains a critical lack of rehabilitation providers. Condition-specific rehabilitation protocols do not exist, and there is no systematic monitoring of outcomes from rehabilitation services.

Generally, rehabilitation initiatives are government-led and government-funded. Community-based rehabilitation services do not exist in Pakistan but require substantial out of pocket co-payments that may increase beyond the first few sessions. Home-based rehabilitation programs are uncommon and almost exclusively private, requiring out of pocket payment indeed. Overall, discussants

estimate that 25% population has access to needed rehabilitation services, and they report that barriers to access are more related to cost than travel distances.

There has been no national assessment of current rehabilitation needs and capacity, and there is no current national plan for rehabilitation. The group felt that urgent action is needed to increase availability of rehabilitation services via a comprehensive strategy including needs assessment, increased funding, training, development of protocols for specialised and non-specialised providers, and development of a national plan for rehabilitation.

ACTION PRIORITIES

- Set up a rehabilitation unit under department of health at the provincial level (in first phase at provincial & divisional level and in second phase up to DHQ/THQ level)
- Establish a monitoring and documentation mechanism of rehabilitation services at provincial level
- Conduct rehabilitation needs assessment at different levels
- Integrate rehabilitation services in provincial health plans based on the 2030 vision
- Establish central coordination mechanism for rehabilitation
- Strengthen the mandate of the national rehabilitation institute

4.7. EMERGENCY AND DISASTER PREPAREDNESS

National emergency and disaster preparedness is coordinated by National Disaster Management Authority and United Nations Office for the Coordination of Humanitarian Affairs. There is a multi-agency disaster plan, which is nationally coordinated. There are, however, no mandatory periodic tests of system readiness, and disaster drills occur irregularly. Facility-level plans are required at first level and tertiary facilities, and most facilities have such plans. There is a regular review of hospital and prehospital disaster preparedness, but this is limited in scope.

There is limited information on staff and patient safety in the prehospital setting and in emergency units. Violence against emergency care staff and patients does occur intermittently, and participants report that existing legal protections do not always provide adequate deterrent. Previously, violence against staff was more common in the event of an unsuccessful patient resuscitation. There has been an improving trend in that the growing presence of emergency medicine specialists in emergency units has reduced this risk.

There are often guards in emergency units to assist with security threats, but in general, facilities do not have formal security strategies. Discussants felt that a systematic process is needed to assess the security situation faced by prehospital and hospital-based emergency unit providers, with the goal of developing for each hospital and prehospital unit specific security plans that address protection of providers, patients and equipment.

ACTION PRIORITIES

- Conduct a regular assessment of emergency care system capacity to mobilize resources in case of disasters, outbreaks and large scale-emergencies.
- Strengthen coordinated planning for disaster, outbreaks and other large scale emergencies at national and provincial levels
- Develop pre-hospital and facility security plans at all levels of service delivery to protect staff, patients and infrastructure from violence

Sindh Specific suggestions

- Dedicated emergency telephone phone number
- Creation of cadre Emergency Medical technicians (EMT)
- Development of Emergency care information system
- Setting Emergency Care SOPs and Protocols at all levels
- Emergency care Quality assurance mechanisms
- Establishment of Provincial Institute for awarding degree, diploma and short courses/certificates for Medics and Para Medics and EMTs

Baluchistan Suggestions:

- Develop the MISP (minimum initial service packages) for sexual and reproductive health emergencies for disasters/emergencies
- Establishment of rehabilitation units at community level (by involvement of LHWs)
- Advocacy among all stakeholders and community on immediate basis with help of WHO, World Bank???
- Adaptation of rescue 1122 model from Punjab
- Capacity building of on service staff regarding emergencies (basic & Advance both)

4.8. NEXT STEPS

Stakeholders used the WHO ECSA results to identify critical gaps in the emergency care system of Pakistan and agreed a set of priority actions for development of each component of the system.

Some of these action priorities can be instituted with limited input of new resources, and can be implemented by partners already working within the emergency care system if engaged and coordinated by the government. Existing partners could provide much of the technical assistance from Government, private and academia, program development and piloting needed to operationalize the agreed upon priorities.

The lead agency could ensure coordination to avoid redundant initiatives, and ensure that appropriate monitoring, evaluation and reporting strategies are included in programmes designed to address these action priorities. There must be a mechanism developed to report and ensure regular progress on the action priorities, to perform serial system assessments and to identify and act on additional pertinent action priorities.

While the exact and incremental benefits of each of the action priorities are unknown, the above represent reasonable and feasible next steps in the development of the national emergency care system in Pakistan. Each of the action priorities above has the potential to significantly improve the emergency care system and the outcomes of acutely ill and injured people countrywide.