DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA

Assessment of Capacities using SEA Region Benchmarks for Emergency Preparedness and Response
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Background and Vulnerability to Disasters

The Democratic People’s Republic of Korea (DPR Korea) is a peninsular country located in the Korean Peninsula, which is the coldest place in the South-East Asia (SEA) Region. Nearly 85% of the total area of the country is mountainous, leaving barely 15% for cultivation purposes. The main vulnerabilities are harsh winters and torrential floods in the summer, and landslides in mountainous areas. The floods of 2007, 2010 and 2011 greatly affected the livelihood of the entire population of the country and enormous economic losses were caused owing to destroyed roads, bridges and buildings. Such natural disasters have affected the health status of the population and resulted in casualties and disease outbreaks. In addition, the country is exposed to frequent occurrences of earthquakes, landslides, tidal waves, typhoons, droughts, waves/surges, cyclones and wind storms.

The country is also prone to human-induced disasters, as evidenced by an explosion that occurred in Ryongchon city, North Phyongan province in April 2004, when two train wagons carrying explosives collided with a wagon containing fuel oil. The country faces several health hazards. After years of progress, the health status of the population began to decline in the 1990s. Many of the health indicators deteriorated, and some of the morbidity and mortality figures increased by two to threefold. Drug supplies are limited and doctors often use traditional medicines to treat illnesses. There is a serious shortage of essential drugs, as well as essential diagnostic equipment and surgical supplies. The economic downturn has led to erosion of the country’s extensive health care infrastructure. Several diseases have reappeared after a gap of many years, such as measles and malaria. Diarrhoeal diseases, acute respiratory infections and other childhood diseases are the main causes of childhood morbidity and mortality. However, there has been some improvement in the nutritional indicators of children in recent years.
Methodology
In Democratic People’s Republic of Korea, the national action plan for emergency preparedness in the health sector was developed in 2001 and the issue of sustainability of the existing emergency response system was raised. Since 2001, efforts have been ongoing with UN agencies to enhance the level of emergency preparedness. Despite these activities, no comprehensive evaluation of the health sector has been done to fully understand its level of readiness and the impact of the action plan.

It is essential to take a critical review of the capacity of the emergency response system and to identify gaps to strengthen it for immediate response to an emergency, which is hard to predict. Starting from this, under the auspices of the Ministry of Public Health (MoPH), the emergency response level in the health sector was evaluated.

The monitoring tool of the benchmarks for emergency preparedness and response developed by the WHO Regional Office for south-east Asia was translated, revised and updated for use as an assessment tool to meet the local context. A workshop was held in early February 2012 to develop the country’s own assessment tool, which was revised according to suggestions from the participants, and then finalized. In March–April 2012, based on the finalized assessment tool, each province assessed the emergency response level in its cities and counties.

On the basis of assessment at the provincial level, under the auspices of the MoPH, a consensus workshop was held to assess the national emergency response level in the health sector and to discuss measures to further improve it. A national evaluation meeting was held in May 2012 in which officers from the MoPH, directors of health bureaus of each province, officers concerned with emergency response from health facilities, as well as a staff member each from the UNDP and WHO country offices participated. The benchmark tool was assessed at this workshop.

Each item for assessment of the benchmarks was discussed and scored. A good situation was evaluated as 2, a poor situation as 1, and no activities as 0. Feedback was also given by all participants about the present gaps and challenges related to each indicator, and the measures and ways to reach a consensus on all the issues raised were discussed.

Findings: Achievements and Gaps
Assessment and review of benchmarks relating to legal framework, rules of engagement, national action plan and resources

**BENCHMARK 1:** Legal framework and functioning coordination mechanisms and an organizational structure in place for health EPR at all levels involving all stakeholders.

**Achievements**
- A multisectoral disaster management coordination committee is in place at all levels.
- A smart command system has been established from the centre to the province, city, and county, ri level through a committee for prevention and relief from earthquakes and volcanoes. Training on emergency for members of the committee was conducted on five occasions through
the cooperation of WHO, and their functions and roles were further enhanced.

Gaps

- Reorientation for emergency managers of the central, province, city and county levels is not conducted on a regular basis and training materials have not yet been updated.
- SOP and guidelines for health managers on emergency preparedness and response are not sufficient.

BENCHMARK 2:
Regularly updated disaster preparedness and emergency management plan for the health sector and SOPs (emergency directory, national coordination focal point) in place.

Achievements

- The action plan of the committee for prevention and relief of earthquakes and volcanoes in the health sector is formulated and is being implemented.
- The following guidelines and manuals containing standards of operation in emergency have been published and are in use in cities and counties.
  - Guidelines on emergency relief actions [2009]
  - SOP on rapid response [2009]
  - Training material on primary care in the community, 2010
  - Guidelines on management of mass casualty, 2010
  - Manual on emergency preparedness and response plan in hospitals, 2009
  - Manual on health sector disaster management, 2009
  - Guidelines on hospital safety, 2009
  - Guidelines on first aid in emergency for health workers, 2008
  - Guidelines on emergency health care, 2008
  - Guidelines on emergency health care for community health workers, 2008

Gaps

- Exercises and mock drills are not conducted in a planned manner and do not cover all disaster-prone areas.
- The action plan and standards are not revised and updated based on experiences and lessons learnt through mock drills.
- Logistics support and medical supplies do not follow the standards required for emergency activities.
- There is a lack of guidelines and manuals for the subnational level.
- Coordination between the health sector and other sectors is not well integrated during periods of normalcy.
- Logistics support and medical supplies are not adequate, especially at the district and lowest levels.
- Standard operating procedures (SOPs) are not available at the district and lowest levels, and health managers are not aware of these.

BENCHMARK 3:
Emergency financial (including national budget), physical and regular human resource allocation and accountability procedures established.

Achievements

- Emergency focal points are designated at all levels from the central to the province, city, county and ri levels.
- A coordination centre for the committee for prevention and relief of volcanoes and
earthquakes has been established in the health sector and has initiated activities.

- An emergency health service, drugs and logistics supply system has been established.

Gaps
- The committees for prevention and relief of earthquakes and volcanoes at each level are not working adequately.
- The capacities of national and provincial institutions are very weak in this action.
- Funding gaps have been identified, but appropriate measures to increase funding have not been taken.
- Funds provided by development partners are not mobilized in time.
- Better coordination and collaboration is required between government and non-governmental organizations at the sub-national level.

BENCHMARK 4:
Rules of engagement (including conduct) for external humanitarian agencies based on needs established.

Achievements
- Related sectors and their intersectoral cooperation have been identified at the central, province, city and county levels, and a collaboration system has been established.
- Relations between the international community including WHO and the Government are reflected in the plan and there is active cooperation between them.
- Disaster management and coordination committees have been established at different levels.

Gaps
- Collaboration between the various sectors and sections is not smooth.

- Cooperation with international organizations needs to be improved.
- Sufficient resources need to be allocated in time and efficient cooperation must be ensured.

Assessment and review of benchmarks relating to community preparedness, participation and response

BENCHMARK 5:
Community plan for mitigation, preparedness and response developed, based on risk identification and participatory vulnerability assessment and backed by a higher level of capacity.

Achievements
- Community risk identification and capacity for conducting vulnerability analysis have increased.
- A few tools and guidelines have been developed for assessment of risk and vulnerability.
- Analysis of emergency risk and vulnerabilities has been undertaken in provinces, cities and counties, and efforts have been made to prioritize vulnerable populations including women, children, the elderly and the disabled.
- Emergency preparedness and response (EPR) plans have been formulated and are implemented by areas and units.
- Focal points at the community level are aware about the role of the community in the national and subnational action plan.
- Roles and responsibilities for disaster preparedness activities are clearly defined for all organizations at the community level.
A minimum budget has been allocated to conduct community-based activities during emergencies in some areas.
In some affected areas, resources were supplied to the community during an emergency for the past two to three years.

Gaps
- Assessment of risk, vulnerability and mapping of essential needs with detailed plan of action for national and provincial institutions has not been conducted. Local-level action plans are not available countrywide.
- No disaster-specific tools and guidelines have been developed yet, except on earthquake.
- Community awareness on emergency preparedness and response is inadequate.
- Integration among partners and with the community is lacking.
- Community-level focal points have minimum access to the national and subnational levels.
- Community participation is poor during emergency periods.
- Mock drills and simulation exercises are not conducted often enough at the community level.

BENCHMARK 6:
Community-based response and preparedness capacity developed, supported with training and regular simulation/mock drills.

Achievements
- Training of health workers is based on the “guidelines on emergency relief actions” so as to enable them to rapidly respond to any circumstance in an emergency. The training is reinforced and consolidated through practice and mock drills in local areas.
- Assessment of health-care workers and community volunteers has been done to determine their existing skills and training needs in some areas of the country.
- Simulation exercises and drills have been carried out for health workers and community volunteers in some disaster-prone areas.
- Some equipment has been provided to volunteers in a few disaster-prone areas of the country.
- Some trained volunteers are playing a vital role during simulation exercises at the community level.

Gaps
- The level of mock drills for emergency response is not high.
- Equipment and materials for emergency response are not sufficient.
- Financial and technical support to conduct training courses for community volunteers is insufficient.
- Financial and logistics support for programme implementation is lacking.
- Supervision and monitoring of community-based organizations (CBOs) is poor.
- Minimum equipment and logistics are supplied to stakeholders and the community.
- More frequent simulation exercises are needed to enhance the skills and competencies of volunteers.

BENCHMARK 7:
Local capacity for emergency provision of essential services and supplies (shelters, safe drinking water, food, communication) developed.

Achievements
- Safe locations have been identified and furnished as shelters for the community in case of an emergency.
- A supply system for emergency delivery of drugs and materials has been established.
Some of the essential services are available, and supplies identified and pre-positioned strategically in a few locations.

A budget has been provided for supporting essential supplies and equipment relating to health in communities in some areas of the country.

A needs assessment has been done for quality of water, water quality testing and sanitation, including latrines.

Financial resources have been allocated in the relevant sectors in some areas of the country.

**Gaps**

- Vehicles, emergency resuscitation apparatus, laboratory instruments, drugs and medical devices are lacking for emergency healthcare delivery.
- Supplies and equipment for water, sanitation and food safety are lacking in the country.
- Financial, logistic and legal support to implement training and programme activities is minimal.
- Stockpiling is very limited; emergency buffer stocks are not maintained at the subnational levels.
- Compared to the need, the availability of essential services is limited.
- There is a lack of integration among partners and the community.
- There is inadequate inventory preparation and maintenance at the national and subnational levels.
- There are gaps in human and financial resources and logistics supplies, especially at the community level.

**BENCHMARK 8:**
Advocacy and awareness developed through education, information management and communication (pre-, during and post-event).

**Achievements**

- Many guidelines and SOP have been developed and are in use for emergency response activities.
- A coordinating centre for emergency has been established at the MoPH and has started working. Actions for ensuring rapid and accurate information and communication have been taken by establishing a computer-based information network connecting two provinces and four counties, with support from WHO.

**Gaps**

- Advocacy materials available at the community level are inadequate.
- The computer-based network is not yet in place due to lack of capacity of the coordination centre in the MoPH.

**BENCHMARK 9:**
Capacity to identify risks and assess vulnerability at all levels established.

**Achievements**

- An analysis of risks and vulnerabilities was conducted at the central-, provincial-, city- and county-level health facilities, and efforts have been made to improve them.

**Gaps**

- Expertise for the analysis of risk and vulnerabilities is being developed.
• Terms of reference (TORs) have been developed for all key health-related functions.

Gaps
• Training for emergency focal points at city and county levels is poor and training is not conducted to include and improve the role of household doctors.
• There are no training centres at sub-national level.
• EPR topics are not fully integrated in the curricula of health-care workers and paramedical staff.

BENCHMARK 11:
Health facilities built/modified to withstand the forces of expected events.

Achievements
• Guidelines for building codes have been prepared at the national and subnational levels.

Gaps
• The infrastructure for hospitals has been designed, but is hard to install owing to lack of motors and pumps.
• There is a lack of equipment, instruments and reagents needed to extend the operating theatre, laboratory and blood transfusion centre in areas of disaster.
• Vulnerability assessments of existing health institutions to impending hazards have been undertaken, but all have not been covered.
• The staff in the hospitals as well as other health workers have not been trained to mitigate risks relating to non-structural damage.
• An emergency response plan is operational at the medical college hospital level, but not in other facilities.
Assessment and review of benchmark: Early warning and surveillance systems for identifying health concerns established.

**BENCHMARK 12:**
Early warning and surveillance systems for identifying health concerns established.

**Achievements**
- Rapid response teams developed at both the national and subnational levels are trained at regular intervals.
- An effective communication system has been developed to inform the community about health risks in an emergency situation.

**Gaps**
- An integrated disease surveillance system has not yet been developed.
- Laboratory capacity and laboratory surveillance need to be improved at the subnational level and for the non-health sectors.
- Regular needs assessment is not done, and gaps and needs at the subnational level have not been addressed properly.
- Information-sharing and networking should be developed between the public health surveillance system and other related hazard surveillance systems.
- A surveillance system for water quality, food safety and security, sanitation and waste disposal has not been established at the national and subnational levels in high-risk areas.
- SOPs to address the needs and gaps in surveillance have not been developed.
- Training of health-care workers in risk communication has not covered all the levels.

**Summary of Results**

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<tr>
<th>Benchmark group</th>
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Conclusion and Recommendations

Conclusion

Overall assessment of benchmarks for Democratic People’s Republic of Korea has identified current situation in emergency preparedness and response, existing working conditions and modalities, progress and achievements, as well as gaps and needs for further improvement. The assessment has identified the requirements of the country in development of standards and operational guidelines for response to natural and man-made disasters as well as further needs in capacity building for national and provincial institutions. Community work and early warning and alert system should be improved and legislative work completed.

Recommendations

Overall recommendations to make the emergency preparedness response (EPR) and disaster management programmes more effective and beneficial

- A health sector national institute for disaster management should be established and survey and research work on innovative methodologies for EPR conducted.
- A legislative framework on unique disaster risk and emergency management should be developed and it should cover the activities of all sectors including health.
- A national updated database for disaster risk and emergency management must be developed and its accessibility at all levels should be ensured.
- Multisectoral coordination should be ensured at all levels and stages of activities.
- The capacity of local and national health systems should be built on the basis of need.
- The information, education and communication (IEC) system must be strengthened by using modern technologies.
- Periodic mock drills and simulation exercises must be conducted to improve the skills and competencies of health workers and community volunteers.
- An efficient supervision and monitoring system must be established.

Benchmark-wise recommendations

BENCHMARK 1:
Legal framework and functioning coordination mechanisms and an organizational structure in place for health EPR at all levels involving all stakeholders.

- Reorientation on a regular basis needs to be done in order to improve the functions and roles of the members of the relief committee in the health sector, and training materials should be updated through drills and exercises.
- SOP on emergency management and software for emergency mock drills need to be developed and used for activities of the relief committee.
- Capacity of the members of the relief committee in the health sector should be assessed and enhanced after annual evaluation.
BENCHMARK 2:
Regularly updated disaster preparedness and emergency management plan for health sector and SOPs (emergency directory, national coordination focal point) in place.

- Action plans and standards need to be updated on the basis of experiences and lessons learnt.
- Exercises and mock drills need to be conducted regularly in all disaster-prone areas.
- Materials need to be supplemented through the state budget and other collaborating agencies.
- Updated SOPs need to be printed and made available to EPR focal points at all levels.
- Health sector guidelines/manuals need to be available at the subnational levels.

BENCHMARK 3:
Emergency financial (including national budget), physical and regular human resource allocation and accountability procedures established.

- The responsibilities and roles of emergency focal points at each level need to be clearly identified and increased.
- Vehicles, equipment and drugs need to be procured to meet the demands.
- Need-based human resources should be deployed at different levels of the health sector and other relevant sectors.
- Adequate funds should be allocated and made available at the subnational levels for emergency management such as transport for distribution, for medical team and emergency procurements.
- An adequate number of quality physical facilities such as infrastructure, accommodation, utilities and logistics should be available at all the subnational levels.

BENCHMARK 4:
Rules of engagement (including conduct) for external humanitarian agencies based on needs established.

- Health managers in the government should be aware of the codes of conduct for international humanitarian organizations.
- A legislative framework including rules, responsibilities and TORs should be developed for engagement of external humanitarian agencies, based on needs.
- A budget should be allocated and made available for emergency response at all levels.

BENCHMARK 5:
Community plan for mitigation, preparedness and response developed, based on risk identification and participatory vulnerability assessment and backed by a higher level of capacity.

- Tools for analysis and assessment of risk and vulnerabilities need to be revised and updated to raise the level of analysis.
- An action plan should be developed countrywide.
- Policies and strategies should be developed for implementation of the EPR plan at community level.
- Disaster-specific tools and guidelines should be developed and supplied countrywide.
- A vulnerability map should be made available countrywide.
• Community participation should be ensured in the formulation, upgradation and implementation of community plans for mitigation, preparedness and response.

BENCHMARK 6:
Community-based response and preparedness capacity developed, supported with training and regular simulation/mock drills.

• Adequate simulation exercises should be conducted to improve skills and competencies.
• Equipment and materials required for emergency response should be procured.
• Financial and technical support should be provided for conducting training in EPR.

BENCHMARK 7:
Local capacity for emergency provision of essential services and supplies (shelters, safe drinking water, food, communication) developed.

• Activities need to be undertaken to procure vehicles, resuscitation equipment, laboratory instruments and medical devices, and drugs required for emergency health-care delivery.
• Materials needed for water, sanitation, food safety and anti-epidemic activities should be procured.
• The nationwide information and communication system for EPR should be completed immediately.
• The availability of essential services should be increased.
• Stockpiling should be done of all essential supplies at all levels.

BENCHMARK 8:
Advocacy and awareness developed through education, information management and communication (pre-, during and post-event).

• Different types of materials related to emergency response need to be developed and distributed.
• Various awareness programmes should be organized for building community capacity to combat emergencies.

BENCHMARK 9:
Capacity to identify risks and assess vulnerability at all levels established.

• Expertise in risk identification and vulnerability assessment should be developed at all levels.
• Tools for risk and vulnerability assessment need to be developed and used to meet the local contexts.
• A repository of information from vulnerability assessments and risk mapping should be developed and updated regularly.
• ICT on risk and vulnerability assessment should be introduced.
• Periodic training should be provided to various personnel and communities to improve their capacity to respond to emergencies.
• Proper planning is needed at every level.
**BENCHMARK 10:**
Human resource capabilities continuously updated and maintained.

- Training should focus on city- and county-level focal points and household doctors.
- Training institutes need to be established at the national and provincial levels.
- Training institutes should have sufficient human resources and equipment.
- Expert trainers should be developed and employed to conduct effective training.
- EPR topics should be integrated into the curricula of health-care workers and paramedical staff.

- Sufficient fire/emergency escapes should be available for reducing hazards during earthquake.
- Hospitals should have an EPR plan and conduct drills according to the plan.

**BENCHMARK 11:**
Health facilities built/modified to withstand the forces of expected events.

- Equipment and materials should be procured for the safety of infrastructure, including motors and pumps.
- Training is needed for engineers on assessment of the structural aspects of health facilities and retrofitting activities.

- All health workers should be trained in early warning and surveillance systems for identifying health concerns countrywide.
- Human, financial and logistical support should be increased for disease surveillance and early warning and response.
- A surveillance system for water quality, food safety and security, sanitation and waste disposal should be established at the national and subnational levels in high-risk areas.
- The surveillance system should be reorganized on the basis of the nature of disaster.
- To achieve the benchmark, existing gaps in the early warning and surveillance system should be filled.

**BENCHMARK 12:**
Early warning and surveillance systems for identifying health concerns established.

- All health workers should be trained in early warning and surveillance systems for identifying health concerns countrywide.
- Human, financial and logistical support should be increased for disease surveillance and early warning and response.
- A surveillance system for water quality, food safety and security, sanitation and waste disposal should be established at the national and subnational levels in high-risk areas.
- The surveillance system should be reorganized on the basis of the nature of disaster.
- To achieve the benchmark, existing gaps in the early warning and surveillance system should be filled.
The WHO South-East Asia Region Benchmarks for Emergency Preparedness and Response Framework with its standards and indicators, are used to assess the existing capacities of countries in emergency risk management with a focus in the public health area. Grouped into four categories (legal, community, capacity building, early warning), the benchmarks provide a comprehensive view of emergency risk management in the area of health in the country. This summary report reflects at a glance the status of the country against the standards and indicators under corresponding benchmarks. Assessments are held in the national context with some adaptation and translation of the tools. This assessment in DPRK was led by WHO Country Office with the support of Emergency and Humanitarian Action unit of WHO’s Regional Office for South East Asia in partnership with the Ministry of Health. The identified gaps in the assessment become the key priority areas for WHO and Ministries of Health and partners to address.