

ANNEX 8 – HEALTH

A. Introduction

1. The health delivery system in NWFP and AJK is comprised of both public and private sector providers, with the private sector mainly limited to urban centers. The public sector provides services through a four-tiered network of facilities and community based workers operating from their health houses. Health outcomes and sector performance in AJK have been comparatively better in comparison with other Provinces of Pakistan (with lower levels of infant mortality, higher immunization and antenatal care coverage). The affected Districts (other than Abbottabad) in NWFP have a much higher IMR and under-five malnutrition levels than the national and provincial average. In addition, the health sector utilization is low in the affected Districts (except Abbottabad) as compared to other Districts in NWFP (Table 1).

Table 1: Selected health indicators for earthquake affected areas of NWFP and AJK ²²

Area	IMR per 1000 LB	ANC %	EPI % fully immunized	Utilization/Day of RHCs ¹	Utilization/Day of BHUs ²
National Average	77	50	77	80	28
NWFP	56	39	76	60	20
Abbottabad	72	36	68	60	9
Batagram	99	23	31	NA	9
Kohistan	104	2	52	NA	3
Manshera	71	36	46	33	8
Shangla	98	31	12	NA	7
AJK	56	40	86	46	18
Muzaffarabad	NA	NA	78	36	17
Bagh	NA	NA	92	33	18
Poonch	NA	NA	NA	69	18

¹ RHCs: Rural Health Centers.

² Basic Health Units.

2. **Consultations and site visits.** The assessment is based on a review of information made available by the Governments of NWFP and AJK, from district teams of the World Bank and ADB, and from the WHO/MOH coordination center. The team visited the affected area, interacted with the people, public and army officials, local and international NGO staff and development partners. The data used are preliminary and likely to change as information is still being aggregated. The assessment report was jointly prepared by experts from the WHO, UNICEF, KfW, ADB and the World Bank. The purpose of the report is to undertake damage needs assessment and outline a short term and medium to long term health sector recovery strategy.

B. Damage Overview and Recovery Needs

3. **Human impact of earthquake.** The earthquake has affected about 4 million people in the eight districts. Although number of deaths and injuries varies according to the source, the pooled average of the data indicates a loss more than 73,000 lives and another 70,000 plus injured, with 90% of deaths and injuries in Manshera and Batagram Districts in NWFP, and Muzaffarabad and Bagh in AJK. Disaggregated data in terms of mortality and gender, displaced, missing, widows, orphans and disability

²² Various sources including PLSM 2004/05, PIHS 2000/01 and MICS 2004.

due to serious injuries are not available, but these are likely to cause a significant social impact. With the approaching winter, inadequate shelter, poor nutrition and lack of access to essential health services, the vulnerabilities of the affected population, especially women and children, are likely to increase.

4. The immediate priority is to take care of the injured. An emergency response involving multiple partners including the Pakistan Army, Ministry of Health, UN agencies, NGOs and local people is underway. Health care is being provided by medical teams and through establishment of 11 field based hospitals with international and local support. In addition, preventive health interventions have been initiated including immunization; vector control; vitamin A supplementation; and disease surveillance has been organized. Over 102,600 patients have been treated and/or airlifted to 70 hospitals in the earthquake neighboring areas. Over 27,700 operations have been performed on the referred patients with 784 reported deaths. About 211 amputations in Rawalpindi and Islamabad and another 500 plus in AJK and NWFP have been performed. Out of 23 reported cases of tetanus, only two have survived. The weakened management and human resource capacities at the district level and provision of health care by volunteer organizations and NGOs makes the task more challenging for health authorities to mount an effective and coordinated response. The likely withdrawal of the many volunteer organizations and individual volunteers from the affected areas will put an additional burden on the public system response.

5. **Damage to the health care delivery system.** Damage to the health sector has been severe, including destruction of health infrastructure. Muzaffarabad and Bagh Districts of AJK and Manshera and Battagram Districts of NWFP (Table 2) suffered the most in terms of destruction of health infrastructure.

TABLE 2: HEALTH INFRASTRUCTURE DAMAGE BY AFFECTED PROVINCE/DISTRICT

Area/Province and District	Number of health institutions/management structures			
	Fully damaged		Partially damaged	
	Urban	Rural	Urban	Rural
NWFP				
Manshera	3	32	1	18
Abottabad	1	10	1	25
Batagram	2	33	-	5
Kohistan	-	-	-	22
Shangla	2	11	1	18
Others	-	-	3	-
Sub-Total NWFP	8	86	6	88
Azad Jammu & Kashmir				
Muzaffarabad	12	90	8	-
Bagh	6	48	-	9
Poonch	5	200	1	7
Sub –Total AJK	23	338	9	16
Total	31	424	15	104

6. **Physical infrastructure damage.** The damage to public health infrastructure has been widespread, with 574 health facilities partially or fully damaged. Almost 75% of the first level care facilities have been either fully damaged or have suffered partial damage. The five District Headquarters Hospitals were completely destroyed, and the only tertiary health care facility in the region suffered structural damage. In addition, the smaller health units including Sub-Health Centers and First Aid Posts serving remote small mountainous hamlets have been destroyed. Information on Lady Health Workers (LHWs) and health houses are not yet available, but the number of health houses destroyed is likely to be proportional to the number of houses destroyed in the affected area. Besides the infrastructure, the majority of medical and office equipment, furniture, drugs and laboratories has been destroyed. Complete information on ambulances and supervisory vehicles is also not available, but 21 vehicles and 6 motorcycles have been reported destroyed. In addition, official records, including the Health Management Information System (HMIS) data at the Director General Office in AJK and at the District level have been

lost. Information on the private sector is scarce; only 9 private health facilities including clinics and laboratories in Bagh, Balakot and Muzaffarabad have been reported destroyed.

7. **Loss of managers and health care providers.** Available information to date indicates that there have been 21 confirmed deaths while 141 staff sustained injuries including senior staff of the AJK Department of Health. There is incomplete information regarding the Lady Health Workers (LHWs) residing among the communities, and it is assumed that the mortality and morbidity among them would be proportional to losses in the population. Thus far, only two supervisors and 19 LHWs are confirmed dead. Field visits and discussion with relief workers indicate that many staff have lost both immediate or close family members and homes. Surviving staff in the affected areas are slowly returning for duty, possibly due to psychological trauma. Many are busy finding shelter for their families, or helping them to rebuild houses. But most are still too weak, both physically and mentally, to deliver health care.

8. The above losses have resulted in a complete breakdown of the health system with disruption of the provision of both secondary and primary care services, including immunization, services provision by LHWs and TB DOTS services. In addition, health management at the central level in AJK, District, and at the facility level was paralyzed. Most official and health management information records and systems were lost.

TABLE 3: SUMMARY OF DAMAGE TO HEALTH CARE SYSTEM IN THE AFFECTED AREAS

Type of Health Institution/Offices	Number Fully Damaged	Number Partial Damaged	Estimated Replacement cost in Pak Rs in million
Tertiary Care Hospital	-	1	500
Secondary Care - District, Tehsil Headquarters and Civil Hospitals	16	13	6,678
First Level Care Health Facilities (RHCs, BHUs and MCH Centers)	203	68	8,091
Other Health Facilities(Dispensaries, First Aid Posts etc)	219	34	159
Health Management Offices	17	3	318
Total Health Facilities	455	119	15,866
Loss of vehicles/motorcycles	21/6	-	22
Total			15,888

9. **Damage assessment and costs for reconstruction:** Based on the available information, the estimated damage to the health sector is estimated at approximately Rs. 7,114 million (Rs. 2956 million in NWFP; and Rs. 4158 million in AJK) (Table 4). This includes damage to medical equipment, furniture and vehicles. The cost of replacing the damaged infrastructure (including new construction and repairing damaged buildings, and replacing equipment and furniture) has been estimated approximately at Rs. 15,888 million (Rs. 5,273 million in NWFP; Rs. 10,614 million in AJK) (Table 4). These estimates are likely to be understated as they do not include estimates of damage to private health care. In addition, indirect losses due to expenditure on treatment of survivors, public health interventions, loss of health staff and the impact of psychological trauma have not been computed. Total health sector needs, including new interventions and replacement of damaged infrastructure, amount to Rs. 18,013 million.

**Table 4: Health Sector - Damage Assessment and Reconstruction Costs
(Rs. Million)**

	Damage ²³	Construction Cost	Seismic multiplier	Total Construction Costs	Total furniture/equipment/Vehicles	Total Reconstruction Costs
NWFP						
Completely Damaged	1,542	2,820	1.05	2,961	708	3,669
Partially Damaged	1,404	1,151	1.20	1,382	211	1,593
Vehicles	11	0		0	11	11
Sub-total	2,956	3,971		4,343	930	5,273
AJK						
Completely Damaged	3,051	6,621	1.05	6,952	594	7,546
Partially Damaged	1,097	2,432	1.20	2,918	139	3,057
Vehicles	11	0		0	11	11
Sub-total	4,158	9,053		9,870	744	10,614
Grand Total	7,114	13,024		14,214	1,674	15,888

C. Reconstruction and Recovery Strategy

10. **Overall approach and key principles for reconstruction strategy.** The Government of Pakistan is preparing an overall national plan of action for reconstruction and recovery for all sectors, including health. It is imperative that this strategy encompass the Humanitarian Charter for minimum standards for health care, including the right to health and respect of the dignity of the population affected by the disaster. The strategy should be constructed on the key principles of *equity, access to essential health care, timeliness, results and accountability*. It should also ensure placement of strong local leadership, strategic coordination of the effort, building local capacity, and reinforcing partnership with non government organizations and UN agencies which characterized the early phase of the emergency response. The strategy should also address the special needs of women and children who are the major clients of the health system, and the emerging needs of persons with disabilities and psychological trauma. The selection of priority health interventions should follow a careful review of the health status of the population and the performance of health services before the crisis, current needs, the gaps, existing capacities and new opportunities.

11. **Critical issues to be considered by the Government:**

- **Access to primary and secondary health care services.** Provisional data on property damage confirm large scale destruction of the health facilities, including the primary and secondary health care network. This in turn means the disruption of health services, leaving nearly four million people without access to primary and secondary health care. This situation does not bode well for a population with poor health indicators before the earthquake. It highlights the need to focus on ensuring access to essential primary and preventive health and secondary care as the system is rebuilt.

²³ Valuing asset damage on basis of its replacement cost.

- **Targeting populations with special needs.** Women and children are the primary users of primary health care services, representing 60-65 percent of the primary health care (PHC) clients before the earthquake and 70-75% of the reported deaths and injuries from the disaster. It is critical to ensure that services for management of acute respiratory infection (ARI) and diarrhea, antenatal and postnatal care is revitalized as a priority. The recovery strategy should address the needs of this population as well as the emerging needs of persons with disabilities.
- **Need for detailed needs assessment and mapping by each District** to assess health facility feasibility in terms of population movement and functional existing facilities and the emerging health situation.
- **Coordination of the relief and rehabilitation activities.** The earthquake relief effort includes 263 teams working in the field, including 11 field hospitals with unsynchronized timeframe for departure from the affected areas. It would be essential that an effective coordination mechanism is put in place to enhance the effectiveness of health interventions and the emergency efforts.
- **Health sector capacity.** The existing management of health sector is weak with inadequate capacity, especially at the district level. With staff already traumatized and looking for options to move to non-earthquake areas, it will be essential to mobilize health managers and health staff from other Provinces to work temporarily in earthquake affected areas.
- **Taking care of healthcare workers.** Health workers share the fallout of the earthquake with the rest of the population. The psychological impact of this is manifested in flight of health workers to areas less affected by the earthquakes, likely increased absenteeism from work, insomnia, or inaction. This would require close management attention and understanding besides counseling to help overcome the mental trauma.
- **Missed opportunities for health promotion and disease prevention.** Many of the affected people have contacts with the health sector, relief organizations, and the army. These contacts are seldom used for more than dressing a wound, exchange of blankets or bedding materials, or food drops. At the acute emergency phase wanes, these encounters should be used for health promotion, disease prevention and promoting positive health seeking behaviors especially in relief camps.
- **Seismically Safe Health Care Facilities.** The health care facilities are among the most important buildings in a community, under any circumstances and therefore the buildings need to be built so as to be safer than ordinary buildings in an earthquake prone area. As identified above, large numbers of health care facilities were damaged and made dysfunctional due to their construction being no different than an ordinary building. As part of the reconstruction effort, the repair and construction of seismically safe health care facilities will need to be a priority.

12. **Reconstruction within the framework of health reforms.** The pre-earthquake assessment indicates that the health sector faced significant challenges including a large, poorly planned PHC infrastructure with very low utilization. To repair and rebuild the health care delivery system ensuring access to essential health care for people living in a difficult terrain is a priority. However, it would be imperative that the Government consider introducing critical reforms, as simple replacement of infrastructure is unlikely to have significant impact on health service quality and health outcomes of the population. The questions to consider include:

- **Whether to rationalize primary and secondary health care facilities as part of reconstruction effort:** There are multiple tiers of health infrastructure in both NWFP and AJK. There are redundancies within the health infrastructure and low utilization of PHC and some of secondary

care facilities. The government should consider rationalizing the tiers of health care, the number of facilities to be rebuilt, and the scope of the secondary care facilities in terms of bed strength by taking into account developments such as population movements. It will be appropriate to critically review the need for each facility in terms of its past performance and the population size it will serve.

- ***Whether to consider alternate management arrangements for provision of PHC Services.*** The earthquake enhanced the vulnerability of the populations in the affected districts. In the short term, it will be a challenge for the Governments of NWFP and AJK to cope single-handedly with the health response and rehabilitation and revitalization of the health delivery system. The Government should seriously consider employing innovative measures to provide services including contracting nongovernmental organizations to manage provision of PHC service provision or for new services which need to be introduced.

Short Term Strategies (Up to 18 months)

13. The reconstruction and recovery strategy should be carried out in two overlapping phases, building upon the ongoing work and learning lessons from the relief effort. In the short term, the most urgent need is to ensure access to an essential health care package that reduces vulnerabilities and save lives as the system is revitalized. The estimated cost for short term is Rs. 7160 million. This should include:

14. ***Reestablish PHC system.*** There is an urgent need to reestablish PHC system to ensure provision of essential health services including public health interventions. The package should at least include basic curative care; immunization services, maternal and child health care including management of ARI and diarrhea, antenatal care and family planning, vitamin A and Iron supplementation and communicable disease control interventions including TB DOTS services with a regular drug supply using rented or prefabricated structures for health facilities. The revitalization of the LHWs with linkage to the facilities will be critical. In addition, the governments should strengthen the non-damaged health institutions by enhancing availability of staff to provide services to the population. The Government can also consider contracting NGOs to provide these services with public sector financing. The mission estimates that 150 such facilities would need to be established and will roughly cost Rs 450 million.

15. ***Provision of services for people living in the relief camps.*** The shelter-less and displaced population are being provided shelters in relief camps in the affected region and in other parts of the country. It would be important to ensure that the displaced populations have access to essential health care and preventive interventions besides safe water and adequate sanitation. In addition, it would be critical to map out these camps and estimate their population size for better planning of service delivery. The mission estimates that for about 500,000 people, the cost of such services is about Rs. 100 million.

16. ***Provision of secondary care services at district and Tehsil level.*** There is need for provision of secondary care services at district and Tehsil level in at least 10 locations where hospitals have been completely destroyed. The Government can consider setting up the secondary hospitals in either tented field hospitals or in prefabricated hospitals. The cost will vary based on the selection. The environmental issues related to health care waste management of hospitals will be of concern and should be addressed during the planning stages of these new institutions. Setting up ten 50-bed pre-fabricated hospitals would cost approximately Rs. 720 million.

17. ***Provision of services for the disabled people.*** The exact number of people who have been disabled due to amputations or have spinal injury is not known, however, the rough estimate is that the number of people with amputations would range between 1200 and 2500. In addition there are cases of spinal injury that would need rehabilitative services and people needing accessibility and supporting aids

(crutches/wheel chairs). The Government should ensure that people with disabilities are registered and receive their basic entitlements. The program will need to expand existing national capacity to address the unexpected need, establish community based rehabilitation programs, and set up a rehabilitation center each in AJK and NWFP with capacity building at the local level. The LHWs can play a critical role in the reconstruction effort and the program should be revitalized with a focus on provision of community based rehabilitation. The Ministry of Health and the Directorate of Special Education are working on defining the exact burden and exploring options. A rehabilitation program with capacity building would cost about Rs. 100 million.

18. ***Psychosocial care of earthquake survivors and health care workers.*** There is need for developing a program to address psychological stress of the affected population and the health workers. It needs to be an integral component of the reconstruction effort. In short term the Government should explore options for providing psychological first aid during the next six months, using community based approaches and community level services through NGOs and LHWs. This will also require a public awareness campaign, preparation of training materials for paraprofessionals and voluntary organizations and primary health care personnel so that they can provide psychological first aid as part of their routine activities. This would also need technical support from mental health professionals. The mission estimates that such a program would require Rs. 60 million. In the medium term it should be part of the health services in the affected areas, which would need Rs. 75 million for a three year program.

19. ***Reconstruction and reequipping health management offices and repair of damaged facilities:*** The reconstruction of health management offices and repair of damaged health facilities by the earthquake is a clear priority for the short term. The health sector would need to revise its building norms to ensure that they fulfill seismic requirements. Both AJK and NWFP would need technical support to ensure repaired buildings are seismically safe. The estimated cost of reconstruction, repairs and furniture will be approximately cost Rs. 5,600 million.

20. ***Management and health planning capacity in AJK*** has been severely compromised by the effects of the earthquake and will meet increased challenges given the huge reconstruction effort. In the short term the GOAJK would need to establish a planning and development unit with the placement of professionals from other provinces on secondment; strengthening managerial and planning capacities through technical assistance and developing master plans for the sector based on principles and guidelines outlined by the government. In addition, in the short term the Government should provide technical support and performance incentives to staff for effective implementation of reconstruction effort. The mission estimates that this would entail a cost of Rs. 30 million.

21. ***Strengthen sentinel epidemiological surveillance system.*** The Government should build upon the sentinel surveillance system established in the affected areas and undertake efforts to improve its quality. It would be critical to build capacity of the staff at the district level for effective functioning of the system including a district based laboratory network. The system should cover all hospitals including field hospitals and service delivery points in the tented camps. Besides tracking spread of diseases like ARI and diarrhea, the program should also focus on MCH surveillance. In addition, Leishmaniasis which is endemic in AJK should be closely monitored. The risk of spread of Leishmaniasis is high in earthquake affected areas due to presence of the dogs (reservoir) and the sand fly (vector). With the abundance of stray dogs and earthquake debris creating ideal breeding site for sand fly and the likely compromised immune status of the affected population poses a potential threat for spread of the disease. The strategies for control in short terms include instituting disease (malaria and Leishmaniasis) control measures at the camp sites; developing appropriate surveillance mechanism to pre-empt the spread of these diseases and reducing the reservoir of Leishmaniasis by control of stray dogs. The surveillance program and Leishmaniasis control over the medium term program will cost Rs. 100 million.

Medium to long term strategy (up to three years)

22. The development and implementation of the medium to long term strategy should be used as a means to also explore options for addressing key issues faced by the sector including low utilization and inadequate quality of care. In addition, the medium plan should also consider developing and putting into place an epidemiological surveillance and emergency preparedness and disaster relief system in the health sector. The estimated cost of medium to long term interventions is Rs. 10,853 million.

23. **Reconstruction and reequipping of health facilities.** All levels of the health facilities including secondary care hospitals which have been damaged by the earthquake would need to be reconstructed and reequipped. The health sector would need technical support to ensure reconstructed buildings are seismically safe. The essential package of services for PHC for the affected region should be revisited to align it with emerging local needs and could also include community based rehabilitation and mental health. The service package and size of hospitals should be revisited in light of population size and past performance. This would also require long term training of staff as hospital managers. The environmental issues related to health care waste management of hospitals will be of concern and should be addressed during the planning stages of these new institutions. The estimated cost of reconstruction, repair and reequipping with medical equipment and furniture is approximately Rs. 10,288 million.

24. **Strengthening health system management:** In the medium term the Government should also plan to strengthen health system management especially at the district level. The management capacity can be built through technical assistance, in-service training and introducing performance based incentives to staff for effective implementation. In the medium term this effort should link with other ongoing efforts for management strengthening. A critical area to enhance accountability and monitor the reconstruction effort mechanism for monitoring and evaluation should be designed and operationalized. The estimated cost of management strengthening is approximately Rs. 40 million.

25. **Community based rehabilitation program and improving access for the disabled.** In the medium term, the need for community based care and rehabilitation for the disabled will be an ongoing priority. This would include community-based services and provision of supportive/assistive devices. The inclusion of the disabled in program design will be of critical importance. The program would also need to play an active role to advocate improved access in public buildings by appropriate design. The cost of providing access to people with disabilities is as low as 0.5% of the total project cost. The three year program will cost Rs. 100 million.

26. **Emergency preparedness and disaster management at the federal, provincial and district levels.** The health sector in Pakistan has inadequate arrangements to respond to emergencies and disasters needing health care actions. With the third disaster to hit NWFP in the past four years, it will be important to learn lessons from the disaster response and put in a system which can initiate a well coordinated response and disaster relief effort in 24 to 48 hours. This would need a full review of the present mechanisms, lessons learnt from the existing relief effort, building capacity of health sector and devising an institutional arrangement in the health sector. The program should be developed with WHO technical assistance and could cost Rs. 50 million.

27. **Building seismically safe health care facilities.** As part of the reconstruction effort the repair and construction of seismically safe health care facilities will need to be ensured. The Government should consider establishment of an independent agency at the national level or procure services of structural engineering firm, whose sole task would be the nationwide review of health care facility structural designs for seismic safety, and the field inspection of their construction. The agency or firm should be adequately funded and staffed with qualified engineers with sufficient authority to achieve their purpose, which is to ensure the design and construction of health care facilities according to modern seismic design provisions (the current Pakistan building code of choice, UBC-97, is adequate for this

purpose – it needs to be implemented). The agency or firm besides its immediate utilization in the AJK/NWFP reconstruction would be help design a medium-term program, of seismic retrofitting of all health care facilities nationwide in high seismic zones.

Table 5: Summary of Health Sector Needs in Earthquake Affected Districts of NWFP and AJK

Item	Requirements	Estimated Cost in Pakistan (Rs. million)		
		Short Term Needs (next 18 months)	Medium to long term (24 months to 60 months)	Total cost
<i>Short Term Strategy (up to 18 months)</i>				
1	Reestablish PHC system in rented or prefabricated structures	450		450
2	Provision of services for people living in the relief camps	100		100
3	Provision of secondary care services at district and Tehsil level	720	300	1020
4	Provision of services for the disabled people	100		100
5	Psychosocial Care of Earthquake Survivors and the health care workers	60	75	135
6	Reconstruction and reequipping health management offices and repair of damaged facilities	5600		5600
7	Management and Health planning capacity in AJK	30		30
8	Strengthen epidemiological surveillance system	100		100
<i>Medium to Long Term Strategy (up to three years)</i>				
1	Reconstruction and reequipping of health facilities		10,288	10,288
2	Strengthening health system and management		40	40
3	Community based Rehabilitation Program and improving access for the disabled		100	100
4	Emergency preparedness and disaster management for the health sector at the federal, provincial and district		50	50
Total estimated costs for recovery		7,160	10,853	18,012