**自然灾害卫生防病健康宣教与媒体沟通**

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# 第一部分 灾后卫生防病核心信息

## 一、灾害导致伤害的预防和减轻

（一）洪涝灾害

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 避免到经常发生洪水的地方去 | 当心被水淹没的路桥不要试图穿越河流 |
| 确保家中安全 | 将物资移至高处切断家中电源及燃气洪水来袭时，勿使用电力设备遭受洪水袭击后，勿使用燃气或电力设备 |
| 听取权威机构的建议 |  |

（二）地震灾害

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 确保家中安全 | 将笨重家具固定至墙上检查移动物件是否固定将易碎物品放置低处货架上 |
| 保护自己 | 地震发生摇晃时，如果在室内，到桌椅底下进行躲避并抓紧桌椅如果在移动车辆上，勿穿越桥梁如果在室外，跑到空旷处远离电线、电线杆及其他建筑物 |
| 保持镇静，不要慌乱 | 以安全、快速的方式有序地、从容地从建筑物中撤离使用楼梯，不要使用电梯 |
| 受伤后，尽快寻找医疗救助 | 尽快至最近的医疗机构救治 |
| 做好余震准备 | 不要使用电梯如果摇晃停止，请尽快从建筑物中安全撤离 |
| 听取权威机构的建议 |  |

（三）台风灾害

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 保持警惕，保护自己 | 室内逗留并保持冷静关注收音机或电视公布的气候变化情况如需要，到最近的避难场所 |
| 准备应急物资 | 储备食物、水、燃料、电池、蜡烛及急救物资准备手电筒与收音机 |
| 听取权威机构的建议 |  |

（四）泥石流

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 转移至安全地区 | 避免到定为永久危险的地区如果遇到泥石流，尽快转移至高处或至避难所 |
| 保护自身安全 | 时刻保证食物和饮水不被污染 |
| 听取权威机构的建议 |  |

（五）海啸

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 地震来袭时，远离水域转移至高处 | 注意海水的异常升高或降低地震过后不要在地势低或海岸线附近逗留 |
| 听取权威机构的建议 |  |

## 二、灾后传染病的预防与控制

（一）食源性与水源性疾病

|  |  |
| --- | --- |
| **核心行为信息** | **相关信息** |
| 食用干净安全的食物 | 保证食物来源安全准备或烹调食物时，正确洗手将食物放置于干净、密闭的容器中请勿将煮熟的食物放置时间过长 |
| 饮用安全水 | 饮用开水（保证煮沸2-3分钟时间）使用含氯消毒剂进行消毒。 |
| 听取权威机构的建议 |  |

（二）腹泻

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注腹泻的症状与体征 | 确认腹泻的症状与体征，主要包括：每天至少三次水样便极度口渴眼球或眼眶凹陷 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置将出现腹泻症状与体征的病人送到医院治疗 |
| 腹泻治疗遵循四原则 | 腹泻治疗应遵循的四原则：增加输液继续母乳喂养增加锌摄入量如果儿童仍无改善，请立即向专业人员咨询 |

（三）霍乱

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注霍乱的症状与体征 | 确认霍乱的症状与体征，主要包括：突然多次出现无痛水样便呕吐迅速脱水（如眼球深陷，皮肤紧皱、干燥） |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置将出现霍乱症状与体征的病人送到医院治疗 |
| 食用干净安全食物 | 正确洗涤与烹饪食物食物远离虫、鼠封存食物 |

（四）伤寒

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注伤寒的症状与体征 | 确认伤寒的症状与体征，主要包括：持续高热身体不适（虚弱）头痛食欲不振腹泻或便秘，腹痛血样便 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置将出现伤寒症状与体征的病人送到医院治疗 |

（五）虫媒疾病

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注登革热的症状与体征 | 确认登革热的症状与体征，主要包括：突然高热，可能持续2-7天关节或肌肉疼痛，眼后疼痛身体虚弱皮疹鼻子出血或牙龈出血腹部疼痛咖啡样物吐出黑色便不管何种形式的出血发生，立即求助卫生专业人员 |
| 密切关注疟疾的症状与体征 | 确认疟疾的症状与体征，主要包括：畏寒高烧出汗剧烈头痛 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置将出现登革热或疟疾的症状与体征的病人送到医院治疗 |
| 寻找并破坏蚊虫滋生地 | 发现并破坏所有可能的蚊虫滋生地封闭装水容器至少一周清洗一次装水容器清扫周围环境 |
| 随时防范自身被蚊虫叮咬 | 蚊帐内睡觉（如果可行，尽量使用经杀虫剂处理的蚊帐）使用个人防护措施防止蚊虫叮咬，例如：着长袖衫或长裤使用杀虫剂 |
| 遵循治疗原则 | 按规定服药不要提供阿司匹林 |

（六）其他传染病

1. 急性呼吸道感染

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 如果儿童有咳嗽症状，但有其他肺炎相关症状与体征 | 确认肺炎的症状与体征，主要包括：呼吸急促或呼吸困难异常呼吸音高烧不能哺乳或饮水 |
| 寻求医疗救助 | 清楚最近的卫生机构或卫生人员位置当儿童患有咳嗽，尤其是肺炎症状明显时，求助专业人员如果病人出现严重症状时候，立即送到最近医院治疗 |
| 遵循治疗原则 | 按规定服药保证饮水按时接受随访 |
| 对0-11月龄儿童进行免疫接种 | 遵循免疫规划婴儿1岁之前保证其足够的免疫接种剂量 |
| 对儿童补充维生素A | 维生素A能够增强儿童免疫与呼吸系统 |

2. 麻疹

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 保证婴儿或儿童温暖与干燥 |  |
| 密切关注麻疹的症状与体征 | 确认麻疹的症状与体征，主要包括：全身斑疹，持续3天以上发热（38度以上）以及以下几种：咳嗽、流涕、红眼或结膜炎 |
| 寻求医疗救助 | 清楚最近的卫生机构或卫生人员位置出现任何症状与体征，即向专业人员咨询 |
| 遵循治疗原则 | 按规定服药按时接受随访 |
| 对儿童补充维生素A | 维生素A能够增强儿童免疫与呼吸系统 |
| 对其他6月龄-15岁儿童进行麻疹免疫接种 | 遵循免疫规划保证足够的免疫接种剂量 |

3. 肺结核

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 对正在接受药物治疗的人：按规定疗程继续治疗 | 向最近的卫生机构或卫生人员咨询向卫生专业人员告知你的情形每天按时服药按时接受随访随访时提交痰标本 |
| 密切关注肺结核的症状与体征 | 清楚肺结核的症状与体征，连续咳嗽两周或以上，并伴或不伴以下症状：发热胸背痛咳血或反复出现血痰体重严重下降其他症状：如出汗、疲劳、身体不适、气短 |
| 寻求医疗救助 | 清楚最近的卫生机构或卫生人员位置向专业人员咨询 |
| 咳嗽与打喷嚏姿势正确 | 咳嗽时，捂嘴；打喷嚏时，捂鼻。咳嗽或打喷嚏时勿对向他人咳嗽或打喷嚏后，使用肥皂洗手 |

3. 水痘

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注水痘的症状与体征 | 清楚水痘的症状与体征，主要包括：微红皮损，发热后3-4天出现水泡身体虚弱肌肉或关节痛突然发热 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置将任何怀疑得水痘的病人送到医院治疗 |
| 防治水痘传播 | 通知卫生机构怀疑得水痘的病例隔离病人 |

4. 破伤风

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 伤口的处理 | 用清水清洗伤口保证伤口干燥、干净。尽量消毒处理 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置向专业人员/卫生机构咨询 |
| 保护自己免遭破伤风 | 保证伤口干燥、干净接种破伤风疫苗咨询是否需要接种破伤风类毒素按时接受随访穿保护性鞋具 |
| 密切关注破伤风的症状与体征 | 清楚破伤风的症状与体征，主要包括：张嘴或吞咽困难颈部肌肉强直疼痛性肌肉收缩呼吸困难发热 |

6. 钩端螺旋体病

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 密切关注钩体病的症状与体征 | 清楚水痘的症状与体征，主要包括：发热肌痛，但无体征头痛小腿肌肉疼痛个别病例眼睛微红严重病例躯体微黄色渐退黑色尿与白色大便尿量减少严重头痛 |
| 寻求医疗救助 | 了解最近的方便就医的卫生机构或卫生人员位置出现钩体病症状或体征，即就医 |
| 遵循治疗原则 | 按规定服药按时接受随访 |
| 防治钩体病 | 避免在可能受污染的水源或洪水中洗澡或玩耍使用手套或水靴等进行防护保证环境干净，无啮齿动物 |
| 社区钩体病病例的监测与报告 | 清楚最近的卫生人员或卫生机构清楚钩体病的症状与体征任何出现钩体病症状或体征的个体均要报告 |

## 三、非传染病预防与救治

（一）高血压与糖尿病

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 告诉医务人员你的身体状况 | 弄清楚最近的医务人员的位置提交你的病史请求提供药物 |
| 定期检查 | 定期进行血压测量定期进行血糖测量 |
| 遵循治疗疗程 | 按时服药经常锻炼尽量少食用高热量、高盐和高脂肪食物不要吸烟减压 |

（二）支气管哮喘

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 告诉医务人员你的身体状况 | 清楚最近的医务人员或医疗机构的位置发生哮喘时，就近到医疗机构向医务人员咨询提供你的病史 |
| 防治哮喘 | 按时按量服药尽量不去灰尘多的地方遇有灰尘时，戴口罩 |

## 四、饮水与环境卫生

（一）用水卫生

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 饮用安全水 | 开水（保证煮沸2-3分钟时间）使用含氯消毒剂进行消毒使用干净的带有盖子的装水容器 |
| 保护水源 | 水源不受污染有专门垃圾处理站负责垃圾处理供水系统出现问题立即报告并修理保证水源附近有废水排泄通道 |

（二）厕所卫生

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 人为垃圾的处置 | 使用厕所进行大小便保证厕所远离水源（15-25米）不要露天大小便在规定地点大小便 |
| 保证厕所干净 | 及时冲洗 |
| 如厕后讲究个人卫生 | 如厕后用肥皂洗手 |

（三） 个人卫生

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 正确洗手 | 使用肥皂水洗手正确的洗手顺序先用清水淋湿手和手腕，擦上肥皂右手掌搓洗左手，左手掌搓洗右手掌心相对，双手交叉相互摩擦手指背对手指交叉一手掌握另一手大拇指旋转搓擦，交换进行一手手指与大拇指在另外一手中旋转搓擦，交换进行 |
| 讲究个人卫生 | 保持洁净勤洗澡饭前饭后洗手经常剪手脚指甲睡觉时穿干净衣服流鼻涕或咳嗽时捂嘴用餐后刷牙如厕后用肥皂水洗手 |

（四）垃圾处理

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 正确处置垃圾 | 不要随意乱扔垃圾将垃圾放入废物桶，如已满，请放至指定地点不要焚烧垃圾，包括塑料垃圾将废物放入垃圾桶或回收桶 |
| 垃圾分级制度 | 减少、再利用和可循环将可生物降解垃圾与不可生物降解的垃圾分开正确收集、放置与处置垃圾售卖可循环垃圾将剩余食物当作动物粮食 |
| 买卖或合成可生物降解垃圾 | 不要焚烧垃圾请专业部门帮助处理危险垃圾 |

（五）媒介控制与排水

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 保持住所或避难所卫生 | 保持周围环境卫生正确处置垃圾发现并破坏可能的蚊虫、老鼠繁殖地 |
| 保证用水管道干净 | 不要向用水管道处随便扔垃圾用水管道要封闭以防止蚊虫繁殖 |

## 五、营养与食品安全

（一）母乳喂养

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 婴儿母乳喂养 | 保证0-6月龄婴儿母乳喂养母乳能够为0-6月龄婴儿提供所需营养与水分母乳喂养能保护婴儿免受疾病母乳喂养时间越长，母乳产生量越大如果不能坚持母乳喂养，请另外一位母乳喂养的母亲协助 |
| 坚持母乳喂养至婴儿2岁或更大 | 母乳对2岁或更大儿童有益除了母乳喂养外，添加营养食品 |

（二）营养、食品安全与食品安全

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 提高日常食品的营养价值 | 增加鸡蛋、油、蔬菜与水果 |
| 安全食品可以预防水源性或食源性疾病 | 食用安全食品食物储存于干净密闭容器内 |
| 预防与治疗营养不良 | 如果怀孕，请向营养专家询问如何补铁如果小孩生长发育出现异常，请向专家咨询备用微量营养物质 |
| 注意食品安全 | 为家人准备好替代食品多储存存放时间较长的食物，如大米、罐装食品、面条、干鱼等种菜或养小动物作为家庭或社区的食物供应 |
| 除了母乳之外，给6月龄以上婴儿及儿童提供营养、安全与干净食物 | 准备像米粥之类的食物增加肉、鱼、禽和蔬菜供应做米粥时，添加两滴油保证吃饭的器具整洁 |

## 六、心理健康与社会心理健康

|  |  |
| --- | --- |
| 核心行为信息 | 相关信息 |
| 关注个人社会心理压力特征 | 清楚社会心理压力特征心理波动抑郁个性改变找到能够提供帮助的社会心理服务机构 |
| 对出现心理问题或者受心理问题影响的病人提供帮助 | 清楚最近的机构或个人位置向相关机构或个人提供病人信息 |
| 参与社区会议、集会及讨论 |  |

# 第二部分 面向公众的卫生防病知识要点

## 地震

### （一）地震常识

地震一般指地壳的天然震动，同台风、暴雨、洪水、雷电等一样，是一种自然现象。全球每年发生地震约500万次，其中能感觉到的有5万多次，能造成破坏性的5级以上的地震约1000次，而7级以上有可能造成巨大灾害的地震约十几次。地震活动在时间上具有一定的周期性，即在一个时间段内发生地震的频次高、强度大，称之为地震活跃期；而在另一个时间段内发生的地震相对频次低、强度小，称之为地震平静期。根据多数专家的研究判定，本世纪初可能是我国大陆地区地震活动的第五个高潮期，其间可能发生多次7级，个别甚至更大的地震，强震的主体活动地区将在我国西部，东部地区中强地震活动也将相对活跃。

地震灾害突发性、连续性等特点。但地震发生前是有预兆的，尤其是大地震发生之前，人们不仅可以借助于仪器的观测，发现地球内部和表面的物理、化学等微观的异常变化，而且还能直接观察到自然界的大量宏观异常现象，分析鉴别这些异常现象，从中提取发生地震的准确前兆信号，这是地震预报工作的基础。目前我国的长中期预报水平稍高些而短临预报水平较低。

破坏性地震会给国家经济建设和人民生命财产安全造成直接和间接的危害和损失，尤其是强烈的地震会给人类带来巨大的灾难。目前，每年全世界由地震灾害造成的平均死亡人 数达8000～10000人／次，平均经济损失每次达几十亿美元。据联合国统计，本世纪以来，全世界因地震死亡人数达260万，占全球自然灾害所造成的死亡总和的58％。从某种意义 上说，地震是群灾之首。

我国地震灾害频度高，强度大，成灾率高，这是造成地震灾害特别严重的原因。同时，我国民众防灾意识不高，同一震级的地震，造成伤亡的人数可多达数倍。另外，我国大部分城市的基础设施，抗震性能较差。建国头20年中，多数建筑物和工程未考虑抗震设防，加之城市生命线管线纵横交错，埋设不合理，有的材料强度不够，有的年久失修，使我国多数城镇防震抗震的能力脆弱，潜在着很大的隐患。广大农村多属土、石结构建筑，抗震能力更差。据估计，地震若发生在我国工业城市及人口稠密的地区，8级左右或7级左右以及5、6级左右的地震所造成的经济损失分别为百亿元、数十亿元和数亿元人民币。

### （二）地震前的准备

1.检查和加固住房。对不利于抗震的房屋要加固，不宜加固的危房要撤离。对于笨重的房屋装饰物如女儿墙、高门脸等应拆掉。

2.合理放置家具、物品 。固定好高大家具，防止倾倒砸人，牢固的家具下面要腾空，以备震时藏身；家具物品摆放做到“重在下，轻在上”，墙上的悬挂物要取下来成固定位，防止掉下来伤人；清理好杂物，让门口、楼道畅通；阳台护墙要清理，拿掉花盆、杂 物；易燃易爆和有毒物品要放在安全的地方。

3.准备好必要的防震物品 。准备一个包括食品、水、应急灯、简单药品、绳索、收音机等在内的家庭防震包，放在便于取到处。

4.进行家庭防震演练。进行紧急撤离与疏散练习以及"一分钟紧急避险"练习。

### （三）地震发生时的自救

1.发生大地震时不要急。破坏性地震从人感觉振动到建筑物被破坏，一般需要几秒到十几秒钟，在这短短的时间内你应根据所处环境迅速作出保障安全的抉择。如果住的是平房，那么你可以迅速跑到门外。如果住的是楼房，千万不要跳楼，应立即切断电闸，关掉煤气，暂避到洗手间等跨度小的地方，或是桌子，床铺等下面，震后迅速撤离，以防强余震。

2.人多先找藏身处。学校，商店，影剧院等人群聚集的场所如果遇到地震，最忌慌乱，应立即躲在课桌、椅子或坚固物品下面，待地震过后再有序地撤离。

3.远离危险区。如在街道上遇到地震，应用手护住头部，迅速远离楼房，到街心一带。如在郊外遇到地震，要注意远离山崖，陡坡，河岸及高压线等。正在行驶的汽车和火车要立即停车。

4.被埋要保存体力。如果震后不幸被废墟埋压，要尽量保持冷静，设法自救。无法脱险时，要保存体力，尽力寻找水和食物，创造生存条件，耐心等待救援。

### （四）灾后的防病

1.确保不摄入受污染的食物和水。特别是对饮用水，有条件的地区要向当地有关部门索取饮用水消毒片，消毒后煮沸再饮用。

2.避免与他人共用毛巾、餐具和洗脸水等。用过的餐具尽量用沸水消毒。

3.积极参加爱国卫生运动，对自己所在地环境进行整治，正确处理生活垃圾和粪便，不要把垃圾和粪便倾倒在水源附近。有条件的地区，可以使用漂白粉等对周边环境进行消毒。对孳生蚊虫的积水，可以用敌敌畏等进行消毒。同时，可以投放一定的灭鼠饵料，避免老鼠造成疾病传播。

4.对避险地周边出现的动物尸体要远离避险地和水源地深埋，对已经腐败的，最好焚烧后再深埋。

5.积极接受和参与所在地的各种健康教育知识宣传，掌握基本的防病知识；

6.有病及时就医，如发现周围亲属、朋友出现传染病症状后，及时报告卫生防疫部门。

7.正确认识传染病。地震后容易出现传染病的高发甚至暴发，但只要采取正确的方法积极主动预防，大规模传染病出现的几率并不大，是完全可以预防的；周围亲属等出现的小的传染病，只要治疗及时，也完全不会造成流行，不必因此过于紧张。

8.缓解精神压力。通过注意保持日常习惯、及时解决日常矛盾、寻找方法放松自己、向亲朋或者心理专业人员求助、参与娱乐休闲活动、平衡营养膳食等方式使自己保持良好的和正确的心态。

## 二、洪涝

### （一）洪涝灾害常识

洪涝灾害是指因大雨、暴雨或持续降雨使低洼地区淹没、渍水的现象。洪涝灾害除危害农作物外, 还破坏房屋、建筑、水利工程设施、交通设施、电力设施等，并造成不同程度的人员伤亡。

就全球范围来说，洪涝灾害主要发生在多台风暴雨的地区。这些地区主要包括：孟加拉北部及沿海地区；中国东南沿海；日本和东南亚国家；加勒比海地区和美国东部近海岸地区。此外，在一些国家的内陆大江大河流域，也容易出现洪涝灾害。

本世纪以来，世界各国曾先后发生过近40次特大洪涝灾害，每次都导致上万人的死亡和千百万人的流离失所。在近几十年中，洪涝发生频次与灾害损失都在逐年增加。

中国自古就是洪涝灾害严重的国家。据不完全统计，在从公元前206年到1949年的2155年间，共发生较大水灾1092次，死亡万人以上水灾每5—6年即出现一次，这种局面到现代尚无根本的改变。

洪涝灾害不但直接引起人员伤亡和财产损失，还造成一系列其它灾害如滑坡、泥石流、疫病的出现。

1951—1990年。我国平均每年发生严重洪涝灾害5.9次，平均受灾面积667万公顷，其中成灾面积470万公顷，死亡三四千人，倒塌房屋200余万间。1991年全国有25个省、市、区发生不同程度的洪涝灾害，农作物受灾面积2400万公顷，死亡5133人，倒塌房屋498万间，直接经济损失达799亿元。

主要的洪涝区分布在大兴安岭—太行山—武陵山以东，这个地区又被南岭、大别山—秦岭、阴山分割为4个多发区。我国西部少雨，仅四川是洪涝多发区。根据历史洪涝统计资料，洪涝最严重的地区主要为东南沿海地区、湘赣地区、淮河流域，次多洪涝区有长江中下游地区、南岭、武夷山地区、海河和黄河下游地区、四川盆地、辽河、松花江地区。全国洪涝最少的地区是西北、内蒙和青藏高原，次为黄土高原、云贵高原和东北地区。概括而言，洪涝分布总的特点是东部多，西部少；沿海多，内陆少；平原湖区多，高原山地少；山脉东、南坡多，西、北坡少。

### （二）洪水来临前的准备

1.关注有关雨、水情预报信息。

2.熟悉本地区域防汛预案的各类隐患灾害点和紧急转移路线图、联络方式。

3.地处低洼地带的家庭要自备简易救生器材。

4.保持手机、电话的通讯畅通，以利接收相关信息。

5.做好避险准备，撤离时注意关掉煤气阀、电源总开关等。

6.撤离时要听从指挥，团结互助，险情未解除，不要擅自返回。

### （三）洪水来到时的自救

1.洪水来到时，来不及转移人员，要就近迅速向山坡、高地、楼房、避洪台等地转移，或者立即爬上屋顶、楼房高层、大树、高墙等高的地方暂避。

2.如洪水继续上涨，暂避的地方已无法自保，则要从分利用准备好的救生器材逃生，或者迅速找到一些门板、桌椅、木床、大块的泡沫塑料等能漂浮的材料扎成筏逃生。

3.如果已被洪水包围，要设法尽快与当地防汛部门联系，报告自己方位和险情，积极寻求救援；发现高压线铁塔倾斜或者电线断头下垂时，一定要迅速远避，防止直接触电或因地面“跨步电压”触电。注意：千万不要游泳逃生，不可攀爬带电的电线杆、铁塔，也不要爬到泥坯房的屋顶。

4.低洼处的住宅遭洪水淹没或围困时，一是安排家人向安全坚固高处转移，二是想方设法发出求救信号。三是利用简易救生器材转移到较安全的地方。安全转移要本着“就近、就高、迅速、有序、安全”的原则进行:先人后物，先老幼残后其他人员；要事先制定转移路线和地点，落实撤离组织人员和责任。

5.如已被卷入洪水中，一定要尽可能抓住固定的或能漂浮得东西，寻找逃生机会。

6.洪水过后，要做好各项卫生防疫工作，预防疾病的流行。

7.溺水自救与救护。当发生溺水时，不熟悉水性时可采取自救法：除呼吸外，取仰卧位，头部向后，使鼻部可露出水面呼吸。呼气要浅，吸气要深，此时千万不要慌张，不要将手臂上举乱扑动。会游泳者，如果发生小腹抽筋，要保持镇静，采取仰泳位，用手将抽筋的腿的脚趾向背侧弯曲，可使痉挛松解，然后慢慢游向岸边。救护溺水者，应迅速游到溺水者附近，观察清楚位置，从其后方出手救援或投入木板、救生圈、长杆、轮胎、塑料泡沫等，让落水者攀扶上岸。

### （四）灾后防病

洪灾期间，为保护自身健康、减少疾病发生，灾区群众应做到：

1．注意饮用水卫生。不喝生水，只喝开水或符合卫生标准的瓶装水、桶装水；装水的缸、桶、锅、盆等必须干净，并经常倒空清洗；对临时的饮用井水、河水、湖水、塘水，一定要进行消毒；混浊度大、污染严重的水，必须先加明矾澄清；漂白粉(精片)必须放在避光、干燥、凉爽处(如用棕色瓶拧紧瓶盖存放)。

2．注意食品卫生。不吃腐败变质或被污水浸泡过的食物；不吃剩饭剩菜，不吃生冷食物；不吃淹死、病死的禽畜和水产品；食物生熟要分开；碗筷要清洁消毒后使用；不要到无卫生许可证的摊档购买食品。

3．注意环境卫生。消除住所外的污泥，垫上砂石或新土；清除井水污泥并投以漂白粉消毒；家具清洗一遍再搬入居室；整修厕所，修补禽畜圈。不要随地大小便，粪便、排泄物和垃圾要排放在指定区域；

4．加强家畜的管理。猪要圈养，搞好猪舍的卫生，不让其尿液直接流入水中，猪粪等要发酵后再施用。管好猫、狗等家禽动物。家畜家禽圈棚要经常洒灭蚊药；栏内的禽畜粪便也要及时清理入集中粪池。

5．做好防蝇灭蝇，防鼠灭鼠，灭螨防螨。粪缸、粪坑中加药杀蛆；室内用苍蝇拍灭蝇，食物用防蝇罩遮罩；动物尸体要深埋，土层要夯实。人群较集中的地方，也是鼠类密度较高的地方；当发现老鼠异常增多的情况需要及时向当地有关部门报告。保持住屋和附近地面整洁干燥，不要在草堆上坐卧、休息。

6．如果感觉身体不适时，要及时找医生诊治。特别是发热、腹泻病人，要尽快寻求医生帮助。其次是遵听医嘱，配合传染病隔离，注意相关药物使用方法。

7．注意手部清洁，不用手、尤其是脏手揉眼睛。各人的毛巾、脸盆、手帕应当单用，如果不得不与病人共用脸盆，则应让健康人先用，病人后用，用完以肥皂将脸盆洗净。

8．接触病人的人应带口罩，口罩应每天换洗和消毒。如皮肤、粘膜被患者的血、尿或口腔分泌物污染，应立刻用消毒酒精擦拭消毒。被病人血、排泄物污染的环境和物品也应及时消毒。

9．为预防皮肤擦烂，应保持皮肤清洁干燥，随身用毛巾等擦汗。可以在皮肤皱折部位扑些痱子粉。 下水劳动时，每隔1～2小时休息一次，擦于脚，在阳光下曝晒片刻。每次劳动离水后，一定要洗净脚，穿干鞋。当发现脚部皮肤破溃并有加重趋势时，如情况许可应暂时不要下水。要设法穿长统靴。有足部皮肤病的应少下水。

10．在血吸虫病流行区，不接触疫水是预防血吸虫病最好的方法。接触疫水前，在可能接触疫水的部位涂抹防护药，如防锄霜和皮避敌等，穿戴防护用品，如胶靴、胶手套、胶裤等。接触了疫水应主动去血防部门检查，发现感染应早期治疗，以防止发病。

11．注意心理健康。保持积极的心理状态，在被水围困的现状下，找些感兴趣的事做，保持良好的生活规律。

12．关注特殊人群护理。为老、弱、病人尽量营造好一点的环境，减少死亡。

## 三、台风

### （一）台风常识

台风实际上是强烈的热带气旋。在热带海洋上发生的热带气旋，其强度差异很大。当热带气旋中心附近最大风力小于8级时称为热带低压，8和9级风力的称为热带风暴，10和11级风力的为强热带风暴，只有中心附近最大风力达到12级的热带气旋才称为台风。

热带气旋灾害是最严重的自然灾害，因其发生频率远高于地震灾害，故其累积损失也高于地震灾害。1991年4月底在孟加拉国登陆的热带气旋曾经夺去了13.9万人的生命。我国是世界上受热带气旋危害最甚的国家之一，近年来，其造成的年平均损失在百亿元人民币以上，象9417号台风那样的登陆强热带气旋，一次造成的损失就超过百亿元人民币。热带气旋灾害主要来自三个方面：强风、暴雨和风暴潮。

西北太平洋和南海是全球热带水域上生成热带气旋最多、发展最强的地方，平均每年生成28.8个，约占全球热带气旋总数的36%。我国是世界上爱热带气旋影响最严重的国家之一，平均每年有6.9个热带风暴、强热带风暴或台风在我国沿海登陆，最多的年份达12个，最少的也有3个。有些热带气旋尽管没有登陆，但仍会对沿海造成较大影响。登陆热带气旋主要集中在7、8、9三个月，平均每月1.9—2.1个，其次是6月和10月，分别为0.7和0.6个。从海南到辽宁，我国广阔的海岸线上均有热带气旋登陆但以广东、海南和台湾等省受热带气旋影响的频率最高。

### （二）台风来临前的准备

1台风可能造成停水停电等，要及时做好日常生活必需品的储备工作。

2. 强风会吹落高空物品，易造成砸伤事故。因此，在台风来临前要固定好花盆、空调室外机、雨棚、建筑工地上的零星物品等，以确保安全。

### （三）台风来时的自我防护

⒈注意收看电视或收听广播的天气预报，并按照政府部门的提示做好防备措施和撤离准备；

2.台风来临时，不要在汽车、旧住房、工棚、临时建筑、脚手架、电线杆、树木、广告牌、铁塔等容易造成伤亡的地点避雨。

3.台风来临时尽量不要外出，不要使用电梯，要迅速切断屋内各类电器的电源防止雷击；并远离玻璃门窗。

4．台风携带的暴雨容易引发山体滑坡、泥石流等地质灾害，造成人员伤亡。因此，地质灾害易发区和已发生高强度大暴雨地区，要提高警惕，及时撤离。

### （四）灾后防病

1.清理受损的房屋时要格外小心，特别是处理碎片，或在碎片上走动时，需穿结实的鞋子或靴子，以及长袖衣服，并带上口罩和手套。

2.被暴露的钉子、金属或玻璃划伤时，应及时就医，以便对伤口正确处理，根据需要注射破伤风针剂。

3.不要生吃被掩埋和洪水浸泡过的食物；

4.不要在密闭的避难所里使用木炭生活和使用燃油发电机，以免由于空气不流通导致一氧化碳中毒。

## 四、山洪泥石流

### （一）山洪泥石流的基本常识

泥石流有多种类型，但主要为暴雨型泥石流。在山区由于暴雨，使山谷中积存的松散岩土体向下游开阔地带倾泻的一种突发性洪流，又称山洪泥流。泥石流中固体物质的体积含量一般超过15％最多可达70—80％，是碎屑与水组成的高容重两相混合体。泥石流具有爆发突然，历时短暂，冲击力大等特点，往往直接危害着工农业生产和人们的生活。

1.泥石流的形成原因

泥石流形成的因素可分自然因素和人为因素。自然因素如地形地貌、地质构造、水文气象、暴雨激发等；人为因素如乱砍滥伐森林、不当的开挖、堆积等活动，会促进泥石流的发生和发展。在具备泥石流发生的地质和地形相同条件时，降雨的特征往是决定因素。人为活动往往为泥石流的形成起了扩大和加快的作用，有时也会变为主导作用。

2.泥石流危害

伴随着大暴雨，泥石流常常具有暴发突然、来势凶猛迅速的特点，并兼有山体崩塌、滑坡和洪水破坏的多重作用，其危害程度往往比单一的山体滑坡、崩塌和洪水的危害更为广泛和严重。它对人类的危害具体表现在如下四个方面：

(1)对居民点的危害:泥石流最常见的危害之一是冲进乡村、城镇，摧毁房屋、工厂、企事业单位及其他场所、设施。淹没人畜，毁坏土地，甚至造成村毁人亡的灾难。

(2)对公路、铁路的危害:泥石流可直接埋没车站、铁路、公路、摧毁路基、桥梁等设施，致使交通中断，还可引起正在运行的火车、汽车颠覆，造成重大的人身伤亡事故。有时泥石流汇入河流，引起河道大幅度变迁，间接毁坏公路、铁路及其他建筑物，甚至迫使道路改线，造成巨大经济损失。

(3)对水利、水电工程的危害:主要是冲毁水电站、引水渠道及过沟桥梁、水坝等建筑物，淤埋水电站排水渠，淤积水库、磨蚀坝面等。

(4)对矿山的危害:主要是摧毁矿山及其设施，淤埋矿山坑道、伤害矿山人员、造成停工停产，甚至使矿山报废。

3.泥石流的防治

泥石流防治，应以防为主，开展预防监测，宣传普及泥石流的知识，重视制止诱发泥石流的人为活动，保护山地生态环境，防患于未然。开展坡面治理，搞好水土保持，实行合理耕作活动，从根本上解决泥石流的灾害。对易发生泥石流地区的工程防护措施主要是：

（1）稳：用排水、拦挡、护坡等稳住松散物质、滑塌体及坡面残积物；

（2）拦：在中上游设置谷坊或拦挡坝，拦截泥石流固体物；

（3）排：在泥石流流通段采取排导渠(槽)，使泥石流顺畅下；

（4）停：在泥石流出口有条件地方设置停淤场，避免堵塞河道；

（5）封：即封山育林，退耕还林。造林增加植被复盖率。

### （二）山洪泥石流的防范和准备

1.事先对所居住地区进行评估，确保居住地植被没有被破坏、以前没有发生过滑坡、不是陡坡、不在斜坡或峡谷的底部、建在斜坡上的建筑物或道路、处在沿河而行的通道上、所在地表表层流失，上面又有大量水流等。如果不清楚上述情况，可咨询当地居民或地方政府。如果存在上述情况，应考虑撤离。

2.居住在可能发生滑坡或泥石流的地方的群众，应清楚的知道发生泥石流时的应急撤离方案。

3.在居住地周围寻找可以避险的地方，如山坡上的大树、电线杆、，墙壁篱笆、新形成的山洞、开阔地带等地方。

### （三）发生山洪泥石流的自救措施

1. 暴风雨期间，多收看电视或收听广播，并按照政府部门的安排做好防备措施和撤离准备；

2. 暴风雨期间，密切注意滑坡或泥石流的信号，必须撤离时应立即撤离，撤离时要服从政府部门的指挥，不要携带大件物品。

3.密切发生泥石流的前兆信号。如注意观察河流或小溪水位的突然上涨或突然下跌，这可能是上游有较大泥石流到来的信号。隆隆声可能是泥石流或滑坡即将到来的信号。

4. 开车要小心前方道路被泥石流阻塞。

5.发生泥石流时，迅速离开泥石流路径，朝与泥石流路径垂直的方向跑、或跑到前述的避险场所；

6. 远离洪水或泥石流可能再次发生的该地区，洪水或泥石流可能再次发生；

7.搜寻受伤或被困人员，尽量不要进入泥石流发生路径。

### （四）灾后的防病

1.清理房屋和物品时，做好个人防护，穿好胶鞋、戴好手套和口罩；不要将儿童带到清理区。

2.对清理的物品应该进行消毒处理，消毒方法可包括含氯消毒剂消毒、煮沸消毒和太阳下暴晒；对于一些容易吸水的、且无法进行清洗和消毒的物品要扔掉。

3.注意饮用水卫生。不喝生水；对临时的饮用井水、河水、湖水、塘水，一定要进行消毒；

4.注意食品卫生。不吃从淤泥中清理出来的食物。

5. 做好环境整治。清理的垃圾要集中填埋和焚烧。有些短时间无法清运的淤泥可用适量的漂白粉进行消毒。

## 五、旱灾

### （一）旱灾的基本常识

指在旱情发生后由于水源、水利基础条件或经济条件的限制，未能及时采取必要抗旱措施，而造成农田减产或城镇工业生产受到损失的现象，农田减产三成以上面积称为成灾面积，其中减产八成以上叫绝收。旱灾不单纯是气象干旱或水文干旱的问题，而是涉及到气象（降水、蒸发、气温）、水文（河流来水、水库、塘坝蓄水、地下水）、土壤（土质、含水量）、作物（种类、不同发育阶段）以及灌溉条件等诸多因素的问题。即使降水少，发生了气象干旱，假如能及时为农作物提供灌溉，补充其所需水量，或采取其它农业措施保持土壤水分，满足了作物需要，也不会形成旱灾。干旱一般是长期的现象，而旱灾却不同，它只是属于偶发性的自然灾害，甚至在通常水量丰富的地区也会因一时的气候异常而导致旱灾。旱灾可造成农作物受旱、干枯和因旱人畜饮水困难。

### （二）灾后防病

由于旱灾一般较长持续时间，灾区群众往往会出现用水、食物等生活困难，特别是有些发生在高温季节，容易出现中暑情况。因此，灾害期间的防病措施包括：

1.保持正常心态，避免由于情绪烦躁导致行为失常，出现车祸、打架斗殴等意外伤害事件。

2.高温时应减少户外活动，避免阳光直晒；尽可能多的饮水。

3.注意用火安全。不能乱丢烟头、不能带纸、烛到室外燃烧。严禁燃烧放烟花爆竹。农村地区尽量不要使用稻草等柴火做饭。

4.饮用水要经过澄清、过滤、消毒等处理后方可饮用。不喝生水、不吃凉菜；不吃变质食物，隔夜食物要热透；吃瓜果，要洗净去皮。

5.不吃病死家禽、畜。发现有病死禽畜要及时报告当地政府或农业、卫生部门，在技术人员指导下进行消毒和深埋处理。

6.如病要及时就医，如发现周围有2人以上患症状相似的病，要向医务人员报告。

# 第三部分 面向专业人员的卫生防病知识要点

## 一、地震

（一）主要公共卫生问题

1.对人群健康的直接影响

（1）大量的人员伤亡。主要是指建筑物倒塌，山体滑坡等造成身体的机械性损伤和死亡。

（2）传染病的发生。主要是由不清洁的饮用水和食物，大规模人群迁移和聚集，卫生设施不完善，媒介生物迁移和人群暴露等引起。

（3）意外伤害。主要是由中暑，犬伤，烧灼伤，冻伤， CO中毒，食物中毒，化学品中毒，放射性物质污染等偶发事件引起。

（4）慢性非传染病病。主要是由于生活和生存环境的改变，导致心脑血管疾病，高血压，糖尿病等疾病发作。

（5）精神及心理创伤。主要是地震灾害的突发性、灾难性引起的早期心理应急反应，以及生活和生存环境的改变引起的短期心理沟通障碍等。

2.对人群健康的间接影响

（1）破坏了公共卫生服务体系。包括免疫规划，妇幼卫生，精神卫生，药物和疫苗供给等正常工作秩序受到破坏；

（2）增加了潜在的伤残寿命。机械性损伤导致的伤残；气性坏疽引起的截肢；建筑物倒塌产生的粉尘吸入而引起尘肺；精神性创伤等。

（3）打乱了正常生活，身体抵抗力下降，精神和情绪紊乱，极易诱发多种疾患；

（4）生态环境破坏，有可能导致某些传染病升高。粪便、垃圾运输和污水排放系统及城市各项卫生设施普遍被破坏，造成粪便、垃圾堆积，苍蝇大量滋生。

3.对公共卫生服务系统的破坏

（1）公共卫生服务能力受到冲击。一方面是公共卫生服务机构受损。包括建筑物毁坏，设备仪器损坏，实验室遭到破坏，数据和技术资料丢失。另一方面是卫生服务人员受损。包括个人和家庭成员失踪，家庭财产受损、长期劳累造成的人员减员等。

（2）卫生服务需求增加。由于大量的伤病人员需要紧急救治，大量的心理疾患者需要疏导，因此，短时间内需要大量的医务人员和医用物资，如医疗器械、血液等。

4.对公共卫生服务系统的间接影响

（1）破坏了公共基础设施。饮水，电力、燃料，通讯和排水系统破坏，导致公共卫生服务能力和工作秩序受到影响；

（2）道路交通和通讯中断，导致医疗卫生服务的及时性受到影响；

（3）媒体、国际国内社会等的过分关注和期望，造成公共卫生服务的工作压力、工作强度和工作难度增加。

（二）主要的卫生应急措施

1.抢救治疗伤员

地震灾害会导致人员伤亡，强烈地震可造成严重的人员伤亡。抢救治疗伤员是卫生部门，尤其是医疗机构的首要任务。

2．加强饮用水卫生措施

（1）选择临时性供水水源并加以防护。选择临时性水源的总原则是：先选用深层地下水，如有困难，依次选择泉水、浅层地下水、地面水。

（2）加强对临时性供水措施的卫生监督。在地震灾害条件下，除修复的部分自来水外，临时供水措施主要有3种方式，即使用消防水龙带输水、用水车送水及用自备的取水工具分散取水。对这些临时供水措施的卫生监督也是保证饮用水卫生的必要手段。

（3）预防尸碱中毒。在地震期间，大量人畜尸体经腐生菌腐化分解后(特别是夏季气温高时)污染环境和水源，可致尸碱中毒。为防止由于饮用被腐烂尸体污染的水而致中毒，水源周围必须彻底清除掩埋的尸体，并进行消毒处理。如果难于找到不致污染地下水源的适宜地点，需要对尸体及局部土壤环境进行消毒处理后再掩埋，可采用一层漂白粉一层尸体的掩埋方法，避免造成对地下水的污染。

（4）对饮用水进行严格的净化消毒。饮用水消毒目前仍以化学含氯消毒剂为主。包括缸水消毒、井水消毒。其方法有直接投加法、持续加药法。

3.加强食品卫生措施

（1）应注意加强集体食堂的食品卫生、临时饮食供应点和街头食品的卫生、外援食品的卫生和食品生产经营单位管理，严防食品受到细菌、霉菌及霉菌毒素、寄生虫及其他昆虫、化学品的污染。

（2）食品生产经营单位在灾害过后恢复生产经营前，必须进行彻底的清洗、消毒、修复，并报请卫生监督机构重新进行卫生审查，经许可后方可恢复生产经营。

（3）在灾害袭击的非常时期，在不引起急性中毒和食源性疾病的基础上，要保证灾民吃到基本安全的食物。对于被污染食品就掌握其一般处理原则，即把未污染和受到污染的食品分开，未污染部分可供食用，污染部分按查明情况分别处理。

4.加强环境卫生措施

（1）临时居住地建设和居住卫生。

（2）简易厕所的修建和垃圾粪便的收集处理。

（3）尸体的卫生学处理。

尸体处理要做好喷、包、捆、运、埋5个环节。

①喷药。扒挖尸体与喷药紧密结合，尸体上可用石灰水、黑色草木灰来吸附含臭物质，也可用1%的二氧化硅与木屑混合吸附硫化氢之类的臭气，或喷洒3%～5%的来苏水。效果较好的是次氯酸钙、氢氧化钙和漂白粉混合喷洒，能很快除臭消毒。鉴于尸体是感染的隐患，WHO建议尸体用石蜡浸泡后，主地焚化，以避免疫情的发生。

②包裹。用包装物包尸体头部，后用覆盖物包整个尸体，或装入塑料袋扎口。有条件时可用标准化的专用尸袋。

③捆紧。将包裹后的尸体最好捆三道(头、腰、腿部)，便于移运和以免尸臭散发。

④ 运出。要用符合卫生要求的专用车辆，将包捆后的尸体及时运走，避免在市区内影响环境。在尸体装车前，要先在运尸车厢垫一层砂土或塑料布，防止污染车厢。

⑤埋葬。在市区外选择好埋尸地点，在不影响市容环境和不污染水源的条件下，将尸体深理地下1.5～2m，上面加盖土壤和石灰。原临时埋在市区内的尸体，一律重新挖出并移运市区外的合适地点进行二次埋葬，以改善市区的环境卫生面貌。

5.传染病控制

（1）重建疾病监测系统。监测的内容包括法定报告的传染病，人口的暂时居住和流动情况，其他主要疾病发生情况，啮齿动物和媒介生物的数量等。

（2）重建安全饮用水系统。

（3）大力开展爱国卫生运动，做好媒介控制。

（4）及时发现和处理传染源，加强病人的隔离、治疗，做好疫点(疫区)的随时消毒和终末消毒工作。

（5）落实应急计划免疫。

6.健康教育

应组织编印卫生宣传资料，宣传灾后饮用水卫生、食品卫生、环境卫生、传染病防治等应急措施及要求，充分利用大众媒介(如广播、电视、报刊等)和多种形式(黑板报、宣传画、演出、讲课等)宣传灾后卫生防病知识，力争提高灾民的卫生知识知晓率的卫生行为形成率。

## 二、洪涝

（一）主要公共卫生影响

1.对人群健康的直接影响

（1）人员伤亡。如果转移及时，一般不易造成直接的伤亡；

（2）传染病流行。

 ①传染源的影响。由于洪水淹没或破坏了水源和饮用水设施，灾区群众难于取得安全的饮用水；同时，洪涝灾害也改变了食物来源和加工、储藏条件，灾区群众的食物安全也存在隐患，造成霍乱、伤寒、痢疾和甲型肝炎等肠道传染病的高发；某些传染病的疫源地，使啮齿类动物及其他病原宿主迁移和扩大，啮齿类动物的种群发生变化，野鼠栖息地的改变引起钩端螺旋体病、流行性出血热等自然疫源性疾病的流行。洪涝灾害对血吸虫的疫源地也有直接的影响，如因防汛抢险、堵口复堤的抗洪民工与疫水接触，常暴发急性血吸虫病。

②传播途径的影响。洪涝灾害改变生态环境，扩大了病媒昆虫滋生地，各种病媒昆虫密度增大，常导致某些传染病的流行。

③易感人群的影响。洪涝灾害导致人群迁移引起易感人群增多 由于洪水淹没或行洪，一方面使传染源转移到非疫区，另一方面使易感人群进入疫区，这种人群的迁移极易导致疾病的流行。如流感、麻疹和疟病都可因这种迁移引起流行。其他如眼结膜炎、皮肤病等也可因人群密集和接触，增加传播机会。同时，居住环境恶劣引起易感人群增多，洪水毁坏住房，灾民临时居住于简陋的帐篷之中，白天烈日暴晒，晚上露宿室外；加上营养状况较差，使机体免疫力降低，对疾病的抵抗力下降，易于传染病的发生。特别是年老体弱、儿童和慢性病患者更易患病。

（3）慢性非传染病。洪涝灾害大多发生在高温多雨时节，气候条件极为恶劣，加上受灾群众的居住条件拥挤、简陋，极易造成心情焦虑，情绪不安，精神紧张和心理压抑，影响机体的调节功能，易导致一些非传染性疾病和慢性传染病增加发作机会，如肺结核、高血压、冠心病及贫血等都可因此而复发或加重。

（4）意外伤害。主要是溺水、触电、中暑、外伤、毒虫咬螫伤、毒蛇咬伤、食物中毒、农药中毒等偶发事件引起。

（5）皮肤病。如浸渍性皮炎（“烂脚丫”、“烂裤裆”）、日光性皮炎、虫咬性皮炎、尾蚴性皮炎等。

2.对人群健康的间接影响

（1）环境破坏

洪水泛滥，淹没了农田、房舍和洼地，灾区群众大规模的迁移；各种生物群也因洪水淹没引起群落结构的改变和栖息地的变迁，从而打破了原有的生态平衡。野鼠有的被淹死，有的向高地、村庄迁移，野鼠和家鼠的比例结构发生了很大变化；洪水淹没村庄的厕所、粪池，大量的植物和动物尸体的腐败，引起蚊蝇滋生和各种害虫的聚集。

（2）水源污染

洪涝灾害使供水设施和污水排放条件遭到不同程度的破坏，如自来水厂、饮用水井、厕所、垃圾堆、禽畜棚舍被淹，井水和自来水水源泉污染严重。大量漂浮物及动物尸体留在水面，受高温、日照的作用后，腐败逸散恶臭。这些水源污染以生物性污染为主，主要反映在微生物指标的数量增加，饮用水安全性降低，易造成肠道传染病的暴发和流行。洪水还将地面的大量泥沙冲入水中，使水体感官性状差，浑浊，有悬浮物等。一些城乡工业发达地区的工业废水、废渣、农药及其他化学品未能及时搬运和处理，受淹后可导致局部水环境受到化学污染，或者个别地区储存有毒化学品的仓库被淹，化学品外泄造成较大范围的化学污染。

（3）食品污染。洪涝灾害期间，食品污染的途径和来源非常广泛，对食品生产经营的各个环节产生严重影响，常可导致较大范围的食物中毒事故和食源性疾病的暴发。一是食品原料污染。 各种食品仓库被淹没、受潮或漏雨，导致大量食品原料发生霉烂、腐败和变质。田间农作物长时间浸泡在洪水中，在高温、高湿的条件下，更易引起霉变和腐败。二是食品生产经营过程污染。洪水来临时，各种食品生产设备、食品包装材料、容器受到污染，特别是在生产设备、设施、厕所、下水道和水井同时被淹的情况下，污染情况就更加严重，生产企业缺乏清洁水，导致被污染的水又污染食品原料等。三是生活环境条件恶化。水中存在的各种动物尸体、人畜粪便及各种垃圾；鼠类因水淹而向食品工厂、仓库和家庭聚集；灾民临时聚居于一些高地和堤坝，人群密度很高，人畜混杂，蚊蝇滋生，灾民缺乏卫生防护设施，缺乏洁净的水，以及不洁容器、炊具盛放食品等，都是食品污染的可能来源。洪涝灾害初期，常常发生一时性食品短缺，灾民饥不择食，食用漂浮在水面上的死家禽家畜、鱼类、甲贝类和其他野生动物尸体。四是食品的运输和储存污染。发生洪涝灾害时，出于紧急救援的目的，临时征用各种交通工具运送救灾食品，这些车辆大多不是食品运输专用车，缺乏必要的防护设施，加之大雨不断，食品极易受到污染。此外，由于没有合适的可供储存食品的仓库，大多数救灾食品临时用雨逢遮避或堆放在帐篷内，极易受潮霉变或腐败变质。五是援助食品质量难以保证 。大量外地运来的救援食品，由于来源渠道广泛，食品包装不同，储运时间长短不一，一些外援食品远距离运输常会导致食品变质。鲜肉类、鱼类及其熟肉、熟鱼、贝类食品、冷冻鲜肉、鱼类等救援食品，在缺乏冷冻、冷藏设施的条件下，微生物污染途径和机会多，生长繁殖快，易发生腐败变质导致食源性疾病。六是 食品卫生管理体系受到影响。洪水泛滥时，原有的按行政区域设置的食品卫生管理网络由于力量所限，不堪重负，或因洪水导致机构松散，直接影响到食品卫生的管理和宣传指导。此外在洪水期间，食品生产经营部门、集贸市场食品卫生监管失控，导致食品生产经营的卫生质量显著下降，也是产生食品污染的一个重要因素。

（4）媒介生物滋生。一是蚊虫滋生。灾害后期由于洪水退去后残留的积水坑洼增多，使蚊类滋生场所增加，导致蚊虫密度迅速增加，加之人们居住的条件环境恶化，人群密度大、人畜混杂，防护条件差，被蚊虫叮咬的机会增加而导致蚊媒传染病的发生。二是蝇类滋生。在洪水地区，人群与家禽、家畜都聚居在堤上高处，粪便、垃圾不能及时清运，生活环境恶化，为蝇类提供了良好的繁殖场所。促使成蝇密度猛增，蝇与人群接触频繁，蝇媒传染病发生的可能性很大。三是鼠类接触增多，洪涝期间由于鼠群往高地迁移，因此，导致家鼠、野鼠混杂接触，与人接触机会也多，有可能造成鼠源性疾病暴发和流行。

（5）医疗和公共卫生服务可可及性降低。洪涝淹没地区，原有的医疗卫生服务正常秩序破坏，服务设施设备受损，医疗卫生服务人员同时受灾，都可能对造成灾区群众有病得不到及时治疗，常规的公共卫生服务项目，如妇幼保健、计划免疫等不能正常开展。

3.对医疗卫生服务系统的破坏

（1）医疗卫生服务能力受到冲击。洪涝灾害可能会导致医疗卫生服务机构房屋、设施设备、药物遭受洪水浸泡而不能使用，从而影响受灾地区的医疗卫生服务能力。

（2）卫生服务需求变化。洪涝灾害改变了受灾群众的正常生活环境、生活条件恶化，容易出现各种疾病。

4.对公共卫生服务系统的间接影响

（1）破坏了供水系统设施。洪涝灾害可破坏城市供水和电力设施设备，也可破坏传统水源，导致出现饮用水缺乏，进而影响公共卫生服务系统的正常运转。

（2）洪涝灾害也可淹没道路交通，冲垮通讯设施，导致医疗卫生服务的及时性受到影响。

（二）主要的卫生应急措施

1.抢救和治疗病人

洪涝灾害可造成严重的人员伤亡，医疗卫生部门应组织专门的医疗小组，奔赴抗病救灾第一线，积极组织抢救和治疗，减少人员伤亡。及时掌握疫情动态，发现传染病病人时，应及时对症施治，并采取相应措施，防止二代病人的发生。

2.加强饮用水卫生措施

（1）水源的选择与保护 应在洪水上游或内涝地区污染较少的水域选择饮用水水源取水点，并划出一定范围，严禁在此区域内排放粪便、污水与垃圾。有条件的地区宜在取水点设水码头，以便离岸边一定距离处取水。

（2） 退水后水源的选择 无自来水的地区，尽可能利用井水为饮用水水源。水井应有井台、井栏、井盖，井的周围30m内禁止设有厕所、猪圈以及其他可能污染地下水的设施。取水应有专用的取水桶。有条件的地区可延伸现有的自来水供水管线。

（3） 对饮用水进行净化消毒 煮沸是十分有效的灭菌方法，在有燃料的地方仍可采用。在有条件时可采用过滤方法。但在洪涝灾害期间，最主要的饮用水消毒方法是采用消毒剂消毒。

（4） 加强供水设施消毒 被洪水淹没过的水源或供水设施重新启用前必须清理消毒，检查细菌学指标合格后方能启用。经水淹的井必须进行清淤、冲洗与消毒。先将水井掏干，清除淤泥，用清水冲洗 井壁、井底，再掏尽污水，待水井自然渗水到正常水位后，按正常消毒方法消毒，即可投入正常使用。

3.加强食品卫生措施

（1）水灾地区需要重点预防以下食物中毒

①霉变粮食引起的霉菌毒素食物中毒：常由食用了霉变的大米或小麦引起。

②细菌性食物中毒：常由动物性食品、已死亡的畜禽肉和没有很好冷藏（如肉、蛋类食品）和存放时间长的熟食（如米饭、蔬菜）引起。

③化学性食物中毒：一般由误食有毒物质引起。由于灾区环境的变化和临时居住地的条件所限，农药、亚硝酸盐及其他工业用化学物质易被误食。

④有毒动、植物性食物中毒：误食猪甲状腺、肾上腺和含毒的鱼类会引起有毒动物性食物中毒；食用未经充分加热的豆浆、扁豆或食用苦杏仁、发芽土豆、毒蘑菇会引起有毒植物性食物中毒。

（2） 发生食物中毒的现场处理措施

①病人的救治与报告：病人的急救治疗主要包括催吐、洗胃、灌肠以及对症治疗和特殊解毒药物治疗。食物中毒报告的内容包括发生地点、时间、人数、典型症状和体征、治疗情况、中毒食物和采取的措施。同时应注意采集病人标本以备送检。

②停止食用中毒食品：封存现场的中毒食品或疑似中毒食品，待调查确认不是中毒食物以后才能食用；通知追回或停止食用其他场所的中毒食品或疑似中毒食品。

③食物及环境的消毒处理工作：对中毒食品进行无害化处理或销毁，并对中毒场所采取相应的消毒处理。对细菌性食物中毒，固体食品可用煮沸消毒15～30min处理；液体食品可用漂白粉消毒，消毒后废弃。餐具等可煮沸15～30min，也可采用漂白粉消毒（1份排泄物加2份消毒液混合放置2h），周围环境可采用过氧乙酸进行喷洒消毒。化学性或有毒动植物性食物中毒就将引起中毒的有毒物进行深埋处理。

（3） 加强灾区食品卫生监督管理 特别是水没有过的食品生产经营单位应做好食品设备、容器、环境的清洁消毒，经当地卫生行政部门验收合格后方可开业，并加强对其食品和原料的监督，防止食品污染和使用发霉变质原料。

（4） 开展对预防食物中毒的宣传教育 主要宣传不能食用的食品，包括：被水浸泡过的食物；已死亡的畜禽、水产品；被水淹过的已腐烂的蔬菜、水果；来源不明的、非专用食品容器包装的和无明确食品标志的食品；严重发霉（发霉率在30%以上）的大米、小麦、玉米、花生等；其他已腐败变质的食物和不能辨认是否有毒的蘑菇等。

4.加强环境卫生措施

（1） 对灾民住所的卫生要求

①首先要选择安全和地势较高的地点，搭建帐篷、窝棚、简易住房等临时住所，做到先安置、后完善。

②棚屋等临时住所要能遮风防雨，棚子顶上不要压砖头、石块或其他重物，同时应满足通风换气和夜间照明的要求。南方要设法降低室温，防止中暑，北方应注意夜间保暖防寒。灶具要放在安全地点，并有人看管，以防火灾。

③最好按原来居住状况进行安置：保持原来建制，按户编号，干群之间、各户之间相互了解，有组织有领导地解决卫生问题。注意居住环境卫生，不随地大小便和乱倒垃圾污水，不要在棚子内饲养畜禽。

④如果有条件，可一步到位建设永久性住宅：卫生部门应做好预防性卫生监督工作，对新建村居民点，可按照国家《村镇规划标准》和《农村住宅卫生标准》，做好规划设计卫生审查并提出建设，在地址选择、功能分区、卫生设施和房屋建筑方面，既适合居民生产、生活的需要，又使新建的村庄和住宅符合卫生要求。

（2）厕所卫生和粪便处理措施

①在灾民聚集点选择合适地点、合理布局、因地制宜、就地取材，搭建应急临时厕所，要求做到粪池不渗漏（或用陶缸、塑料桶等作为粪池）。有条件时可使用商品化的移动性厕所。

②尽量利用现有的储粪设施储存粪便，如无储粪设施，可将粪便与泥士混合后泥封堆存，或用塑料膜覆盖，四周挖排水沟以防雨水浸泡、冲刷。在应急情况下，于适宜的稍高地点挖一圆形土坑，用防水塑料膜作为土地的衬里，把薄膜向坑沿延伸20cm，用土压住，粪便倒入池内储存，加盖密封，发酵处理。也可采用较大容量的塑料桶、木桶等容器收集粪便，装满后加盖，送至指定地点暂存，待水灾过后运出处理。有条件时用机动粪车及时运走。

③集中治疗的传染病病人粪便必须用专用容器收集，然后消毒处理。散居病人的粪便处理：粪便与漂白粉的比为5：1，充分搅合后，集中掩埋；粪便内加入等量的石灰粉，搅拌后再集中掩埋。船上居民的粪便应使用容器收集后送上岸集中处理，禁止倒入水中，以防止疾病传播。

（3） 垃圾的收集和处理方法

①根据灾民聚集点的实际情况，合理布设垃圾收集站点，可用砖砌垃圾池、金属垃圾桶（箱）或塑料垃圾袋收集生活垃圾，有专人负责清扫、运输，做到日产日清。

②及时将垃圾运出，选地势较高的地方进行堆肥处理，用塑料薄膜覆盖。四周挖排水沟，同时用药物消毒杀虫，控制苍蝇滋生。

③对一些传染性垃圾可采用焚烧法处理。

（4）人畜尸体的处理 对正常死亡者尸体应尽快运出进行火化处理。对甲乙类传染病死亡者，应做好卫生消毒，以最快速度运出火化。对环境清理中清出的家畜家禽和其他动物尸体应用漂白粉或生石灰处理后进行深埋。

（5）洪水退后的环境清理工作 水退过后，开展群众性的爱国卫生运动，在广泛进行健康教育的基础上，水淹地区的村庄和住户必须进行彻底的室内外环境清理，做到洪水退到哪里，环境清理就搞到哪里，消、杀、灭工作就跟到哪里。

①组织清理室外环境：整修道路，排除积水，填平坑洼，清除垃圾杂物，铲除杂草，疏通沟渠，掏除水井内污泥，修复厕所和其他卫生基础设施，掩埋禽畜尸体，进行环境消毒，消除疫病发生的危险因素，使灾区的环境卫生面貌在短期内恢复到灾前水平。

②凡是水淹地区的住户，水退后首先由专人对原住房的质量进行安全性检查，确认其牢固性。然后打开门窗，通风换气，清洗家具，清理室内物品，整修家庭厕所，修缮禽畜棚圈，全面清扫室内和院落，清除垃圾污物。必要时将房间的墙壁和地面进行消毒。对室内和临时居住点带回的日常生活用品可进行煮沸消毒或日光下曝晒。待室内通风干燥、空气清新后方可搬人居住。

（6）消毒 由于洪水导致多种微生物混合污染，其中又以肠道致病微生物为主，因此要特别重视食物、饮用水、居住环境的消毒。在消毒方法和消毒剂的选择方面，要求简便易行，价格便宜，供应充足。各级疾病预防控制部门应有具体分工，做好消毒组织工作。首先应有专人负责保护水源和饮用水消毒，同时要搞好环境卫生消毒。对受淹的房屋、公共场所要分类作好卫生消毒工作。要有专人负责，做好消毒剂的集中供应、配制和分发工作，做好消毒常识宣传，组织群众实施消毒措施并具体指导其正确使用。

4.传染病控制

（1）强化灾区预防性的干预措施 加强环境卫生管理，清除垃圾、污物，掩埋动物尸体，进行粪便和家畜管理，改善居住环境。积极保护水源，开展打井或饮用水消毒，使灾民有清洁饮用水。

（2）控制传染源，阻断传播途径 在某些传染病疫区应有重点地控制传染源，开展自然疫源地的灭鼠活动，在灾民密集的庄台、堤坝清除蚊蝇滋生地，有效地控制和消灭病媒害虫。强化食品卫生管理，防止“病从口入”， 控制食源性疾病的发生。

（3）加强疫情监测，建立疫情报告网络 在重点灾区或传染病多发地区设立疫情监测点、严密监视疫情动态，疫情报告及疫情监测在洪涝灾害这一非常时期，要特别重视保持疫情监测系统的敏感性，这是做好救灾防病工作的前提。及时反馈信息，及时通报和报警，以便采取预防决策。

（4）提高人群免疫水平，发挥计划免疫效力 水灾破坏了灾区计划免疫的冷链装备和资料，打乱了正常的工作程序，灾民移动分散，人群免疫水平难以控制。有必要对某些疾病进行疫苗的应急接种和服药预防，有针对性地开展强化免疫和预防服药等，以控制灾区的传染病暴发流行。

（5） 加强特殊人群的健康保护，维护灾民身体健康 儿童、老、弱、病、残及孕妇等特殊人群的身体抵抗力差，由于灾害期间过度疲劳和紧张，环境恶劣、营养不良、生活不安定、日晒雨淋和虫咬，日夜不能安息，处于机体内外病因交加之中极易患病。因此对这类特殊人群应采取加强预防性保健，控制疾病的流行。

（6）加强对流动人口的疫情监测工作，防止疫情的交叉传播。

（7）大力开展爱国卫生运动，改善临时住地的卫生条件，是减少疾病发生的重要环节。同样还要开展卫生知识宣传教育，养成灾民良好卫生习惯，提倡不喝生水，饭前便后要洗手。

6.媒介生物控制

（1）防蚊的主要措施

①环境治理；

②防蚊驱蚊：有条件的灾区，在住处装上纱门、纱窗，或使用经药物浸泡过的蚊帐；睡觉前点燃蚊香（或电热蚊香）；亦可用市售驱蚊剂涂在身体暴露部位。

③室内（帐篷内）、外药物喷洒：如敌敌畏、奋斗钠、三氯杀虫酯等。

（2） 防蝇措施

①清理环境，减少滋生场所。

②室内（帐篷内）、外药物喷洒，也可使用粘蝇纸、粘蝇带、诱蝇笼或苍蝇拍人工捕蝇。

（3）灭鼠措施 洪水期间的临时聚居地属于特殊环境，开展灭鼠时应注意：

①多用器械灭鼠，如鼠笼鼠夹等，但不能使用电子猫，更不能自拉电网捕鼠。此时鼠洞较浅，取水方便，还可用水或泥浆灌洞。

②慎用毒饵：当鼠密度很高，或人群受到鼠源疾病严重威胁时，则应在严密组织、充分宣传的基础上，开展毒饵灭鼠。

③确保人畜安全：不能用熟食配制毒饵，毒饵必须有警告色。投饵工作由受过培训的灭鼠员承担，投饵点应有醒目标记，投毒后及时搜寻死鼠，管好禽畜，保藏好食品，照看好小孩。投饵结束应收集剩饵，焚烧或在适当地点深埋。卫生部门要做好中毒急救的准备。为避免鼠死后，离开鼠体的虫类叮咬，最好在灭鼠同时，在居住区喷洒杀虫剂。

7.健康教育

洪水灾区健康教育是促进救灾防病措施落实的重要保证。健康教育必须与受灾这种非常时期、非常环境和非常对象相适应。教育的内容不仅要和教育对象的心理、文化、素质等相适应，而且应根据灾情、气象、疾病、卫生服务等因素的变化和灾民对健康教育需求层次的变化进行精心组织。

洪水灾区健康教育应由各级救灾防病领导小组统一领导，各地政府及有关部门直至村、居民小组认真参与，形成省、地（市）、县、乡、村、村民小组之间的纵向联系，以及卫生、新闻、出版、教育、文化、工商、企业、财政、金融、工会、妇联、共青团、个体经营者协会等之间的横向联系。洪涝灾害期间，要建立健康教育专业队伍，配备健康教育的专职或兼职人员，确保健康教育措施落到实处，从而促进救灾防病任务的完成。

## 三、旱灾

（一）主要的公共卫生问题

1.生态环境破坏

干旱引起森林大火、土壤缺水等，可造成森林植被破坏，植物的蓄水作用丧失，甚至引起部分植物物种及动物物种的灭绝及迁徙。干旱可能使一些湖沼地区干涸，成为杂草丛生的低地，为野生啮齿动物提供了优越的生活环境。如果在相对较长时间的干旱灾害后，出现暴雨天气，甚至洪涝灾害，则将会引起大量的水土流失、山体滑坡，干旱灾害的恶性循环将有可能发生，生态环境的破坏和恶化将会越来越明显。

2.水源污染

当干旱灾害发生时，降水减少，使得一些河水断流、湖沼干涸，许多饮用水源枯竭，可饮用水资源严重缺乏。同时剩余水源的水质恶化，溶解氧减少，水质呈现出不同的色度变化或呈现不同的异味。干旱灾害时，由于生活、饮用、生产用水的相对减少，工业废水（包括有机、无机混合废水、含重金属、放射性物质的废水、受热污染的冷却水）、生活污水（粪便和洗涤用水）、农业污水（含有多种病原体、悬浮物、化肥、农药等）污染水源的状况更加严重。

3.食品污染

（1） 生活用水、饮用水相对紧张，使用受污染的、不洁的水清洗蔬菜、瓜果等食品，会造成食品污染。

（2） 高温干旱天气下，农作物的病虫害增加，在使用农药的过程中，如果使用不当，则会造成蔬菜瓜果等的化学污染。

（3）干旱灾害期间，由于野外水源水，尤其是放牧区，饮用水及牧草供给量不足，会引起大量牲畜等动物的死亡。如果居民采用死亡动物作为食品来源，则会引起食源性疾患的发生。

（4） 干旱时由于饮用水及食物的相对短缺，则会使老鼠、蟑螂等媒介生物侵扰食品的机会增加，也增加了食品污染的机会。

（5） 由于生产用水紧张，部分不法食品生产经营者用不洁水源作为生产用水，或以次充好，引起食物中毒事故的发生。

4.媒介生物滋生

（1）蝇类滋生 在旱灾条件下，由于水的缺乏，会造成一些不卫生的条件，而有利于蝇类的滋生。另外，在温暖的气候条件下，死亡的动物尸体中的有机成分会很快腐败，提供了蝇类易于滋生的条件。

（2） 蚊类滋生 旱灾可使一些河水断流，河流与湖沼中残留的小水洼会成为蚊类的良好滋生场所。

（3）其他吸血节肢动物接触增多 人类在野草较多、腐殖质丰富的地方露宿时容易遭到恙螨、革螨等侵扰，在存在恙虫病和流行性出血热的地区，对人类的威胁增加。

（4）作为疾病宿主的啮齿动物增长 在干旱的气象条件下，一些湖沼地区干涸，成为杂草丛生的低地。这种地区为野生啮齿动物提供了优越的生活环境，造成其数量的快速增长。

5.传染病流行

旱灾时，饮用水源相对集中，一旦这些水源受到污染将会造成传染病严重的暴发流行。同时干旱时媒介生物的生活习性发生变化，也会引起传染病的特征性流行。蚊、蝇类的滋生，增大了虫媒和肠道传染病流行的机会。啮齿动物数量的快速增长，有可能引起人间流行性出血热的流行。

（二）主要的卫生应急措施

1.提供必需的生活用品。要为灾民提供必需的生活用品，如蚊帐、塑料袋、塑料桶、蚊香、清洁卫生的贮水容器和水处理设备以及灭鼠、灭蟑、灭蝇工具及药品。

2.保证饮用水卫生。加强饮用水取水点保护，加强生活饮用水的净化消毒，疾病预防控制机构应加大饮用水源及生活饮用水的监测，一旦发现饮用水源受到污染，及时采取相应的应对措施。

3.食品卫生。应加强食品的保洁措施，对瓜果蔬菜在食用前应反复清洗消毒，对来源不明的外援食品及饮料应慎用并加强监督监测；禁止食用在自然水域内自行死亡的鱼类、贝类和鸭、鹅等水禽类。

4.环境卫生。干旱灾害时空气中尘土飞扬，飘尘、悬浮颗粒、微生物使得空气质量恶化，为了防止灰尘对居民生活、食品、饮用水、呼吸道疾病增加的影响，居民住房、中小学校、幼（托）机构等单位的门窗应安装防尘设施。

5.加强疾病监测和疫情报告，及时掌握疫情动态。发生重大疫情时，组织有关部门采取积极的预防控制措施。

6.做好中暑的防治。干旱灾害发生时，多为高温季节，容易发生中暑，灾区卫生服务机构在可能发生中暑的不良气象条件下，应采取卫生保健措施，以预防中暑的发生。对发生中暑的患者，及时采取有效措施予以现场急救，并及时转入医疗机构处理，避免发生死亡。

7.健康教育。 组织编印卫生宣传品广为散发；组织广大干部、医务人员、教师和其他人员深入群众进行宣传指导；充分利用广播站、电视台、电台、网络传媒和报刊等大众媒介，开展形式多样的健康教育活动。在大旱期间，由于水源与食品等极易污染，往往引起传染病暴发和食物中毒事件的发生。因此，健康教育的主要任务和重点是减少和消除因生活环境的变化对公众带来的健康危害，引导公众养成良好的卫生习惯，预防和减少疾病的发生。

## 四、台风

（一）主要的公共卫生问题

1. 来势凶猛，范围广，破坏力强，致人伤害严重，伤害种类繁多复杂，如砸伤、压伤、摔伤、淹溺等，医疗救援要求紧迫，具体情况类似水灾、地震。同时需要排险、救困、洗消、防爆等综合救援。

2. 风灾常常伴发洪涝水灾，对生活、生产、生态环境破坏严重，卫生救援的任务紧迫而繁重，具体情况类似水灾、地震。

（二）主要的卫生应急应对措施

1. 风灾期间的卫生救援，主要是立即恢复水源，进行饮水消毒，保证食品卫生，做好饮水与食品的卫生监督，杜绝食源性疾病和肠道传染病。

2. 及时清理掩埋人畜尸体，搞好环境卫生，建立卫生厕所，加强对粪便垃圾的管理。

3. 加强疾病监测报告工作，组织医疗卫生人员深入灾区巡回医疗，开展健康教育。

# 第四部分 特殊条件下的卫生防病知识要点

## 一、高温中暑

在炎热的夏季，高温、高湿、强热辐射天气可造成人体的体温调节、水盐代谢、循环系统、消化系统、神经系统、泌尿系统等出现一系列生理功能改变，一旦机体无法适应，则可能造成体温异常升高不降，引起正常生理功能紊乱，发生中暑相关症状。

 （一）中暑的表现

中暑是指高温环境下由于热平衡和/或水盐代谢紊乱等而引起的一种以中枢神经系统和/或心血管系统障碍为主要表现的急性疾病。气温过高、湿度大、风速小、体弱、对热不适应、劳动强度过大和时间过长、过度疲劳等都易诱发中暑。

中暑的症状可轻可重，轻症中暑可出现头昏、胸闷、心悸、面色潮红、皮肤灼热、体温升高等。一旦发展为重症中暑，则可出现大量出汗、血压下降、晕厥、肌肉痉挛，甚至发生意识障碍、嗜睡、昏迷等。

（二）中暑的治疗

对中暑患者及时进行对症处理，一般可很快恢复。使患者迅速脱离高温环境，移到通风良好的阴凉处平卧休息，给予含盐清凉饮料。必要时给予葡萄糖生理盐水静脉滴注，纠正水、电解质平衡紊乱。

（三）中暑的预防和注意事项

1. 大量饮水。在高温天气，不论运动量大小都要增加液体摄入。不要等到觉得口渴时再饮水。对于某些需要限制液体摄入量的病人，高温时的饮水量应遵医嘱；

2. 注意补充盐分和矿物质。酒精性饮料和高糖分饮料会使人体失去更多水分，在高温时不宜饮用。同时，要避免饮用过凉的冰冻饮料，以免造成胃部痉挛；

3. 少食高油高脂食物，减少人体热量摄入；

4. 穿着质地轻薄、宽松和浅色的衣物；

5. 尽量在室内活动。如条件允许，应开启空调。如家中未安装空调，则可以借助商场或图书馆等公共场所避暑。使用电扇虽能暂时缓解热感，然而一旦气温升高到32.2摄氏度（90华氏度）以上，电扇则无助于减少中暑等高温相关疾病的发生。洗冷水澡或者打开空调对人体降温更加有效；

6. 外出时，应涂擦防晒值SPF 15及以上的UVA/UVB防晒剂，戴上宽檐帽和墨镜，或使用遮阳伞；

7. 出行应尽量避开正午前后时段，户外活动应尽量选择在阴凉处进行；

8. 高温时应减少户外锻炼。如必须进行户外锻炼，则应每小时饮用2-4杯非酒精性冷饮料。运动型饮料可以帮助补充因汗流失的盐分和矿物质；

9. 如高温时驾车出行，离开停车场时切勿将儿童和宠物留在车内；

10. 虽然各种人群均可受到高温中暑影响，但婴幼儿、65岁以上的老年人、患有精神疾病、以及心脏病和高血压等慢性病的人群更易发生危险，应格外予以关注。对于这些高危人群，在高温天气应特别注意，及时观察是否出现中暑征兆。

## 二、低温冰冻

（一） 冻伤

冰雪（冻雨）对人体的伤害主要是因严寒引起的冻伤、冻僵、冻昏迷和冻死，最需要的预防措施是提供御寒防冻的衣被和设备，以及正确救治冻伤的技术。

1. 冻伤常发生的部位：鼻子、耳朵、脸颊、下巴、手指和脚趾。
2. 冻伤的症状
3. 冻伤部位的皮肤发红和疼痛。
4. 皮肤变白或呈现灰黄色皮肤；
5. 皮肤感觉发硬或苍白；
6. 出现麻木。

3.冻伤后的处置

（1）如果你发现有人出现冻伤症状，请立即就医。并同时判断此人是否有低体温症症状。如出现低体温症，就需要立即采取急救措施。

（2）如果有人出现冻伤，而又暂时得不到医疗救治，可采取以下措施进行救治：

①尽快将患者安置在较移至暖和的房间；尽量脱离低温环境，脱掉湿冷衣服、鞋袜和手套，换上干燥衣服和鞋袜；

②除非万不得已，如果不是必须，不要用冻伤的脚或者脚趾走路，否则将导致更严重的伤害；

③将冻伤区域部位浸泡在进入温水中，，不要浸泡在而非热水中。水温应是摸上去比较舒适；

④可用体温温暖冻伤部位。例如可以用腋窝来温暖冻伤手指；

⑤不要用雪或者其他任何东西来揉或按摩冻伤部位，否则会造成引起更严重伤害；

⑥不要用电热毯，电灯或者壁炉，火炉，或者散热器考烘烤冻伤部位。因为冻伤部位是麻木的，极易被烧伤。

4.冻伤的预防

（1）旅途出行注意携带足够防寒衣物，戴上帽子、围巾、手套等保暖物品，并注意携带伞具；

（2）尽量保持衣物干燥，避免弄湿衣服，休息睡觉时，应注意保暖；

（3）尽量多吃些高热量的食物，可以起到御寒的作用；多喝热饮，有助保持体温；

（4）为防止冻伤，要经常观察皮肤，尤其是耳面部和手部等裸露部位，查看有无出现苍白、僵硬或失去知觉；并不时搓揉面部皮肤，伸展筋骨活动手足；

（5）尽量停留在背风向阳的位置；不要穿过于紧身的衣裤，以免妨碍血液循环；

（6）裸手不要接触金属物体，寒冷季节这种物体表面温度很低，热传导很快，手接触易于冻伤；

（7）加强膝关节、肘关节、腕关节和踝关节等部位的保暖防护；

（8）老年人耐寒能力差，旅途中应特别注意腿脚保暖，避免久坐，经常站立活动、跺脚、搓手等促进血液循环。

（二）低体温症

当暴露于在低温环境下时，身体损失热量的速度将开始超过自身产生热量的速度，从而导致低体温或不规则低体温。体温过低时将会影响大脑，导致不能清晰思考和正常活动。

1. 低体温症的高危人群

包括：没有足够食物、衣服和热量来源保暖措施的高龄人群；在气温温度较低房间睡觉的婴幼儿；无人照顾的儿童；饮酒的成年人；有精神疾病的人；长时间呆在户外的人，例如无家可归的人、旅行者和户外工作者。

2. 体温症的征兆

（1）成年人低体温症的征兆包括：打冷战、疲劳、意识模糊、行动迟缓、意识丧失、发音不清、困倦。

（2）婴幼儿低体温症的征兆包括：皮肤冰凉呈鲜红色、活动减少。

3.低体温症预防

（1）采取措施预防寒冷天气是您最好的防御措施。如预先做好房屋和汽车等场所的防寒准备；在极端寒冷天气期间注意采取安全的御寒措施。

（2）在冷天避免淋雨、出汗和冷水浸泡。

4.出现低体温症时可采取的措施

（1）如果出现低体温症状，应立即就医。

（2）如果无法就医，应采取以下措施提高该患者体温：

①把患者移至一个暖和的房间或者庇护所安全场所里；将其所有的湿衣服脱下；

②将患者放在干燥的布料衣物上（毛毯，衣物，毛巾或者床单），用电热毯或者身体接触首先来提高患者身体中心体温（胸部，颈部，头部和腹股沟）；

③如果患者意识清醒，可以给他喝一些不含酒精的热给其热的并且不含酒精的饮料；待患者体温升高后，将其包括头部和颈部等在内的全身包裹在温暖的毯子里，并尽快就医；

④低体温症发生时，患者有可能没有脉搏或者呼吸。如果发生这种情况，应小心处理并立即采取取得急救措施紧急医疗救护。尽管看起来患者像已经死亡，但仍需在提高其体温，同时做心肺复苏，直到患者有反应或者医护人员到来。在有些情况下，貌似已经死亡的低体温患者还是能够被抢救过来的。

（三）一氧化碳中毒

一氧化碳为无色、无嗅、无刺激性的窒息性气体，家庭用煤炉或燃气炉不完全燃烧均可产生一氧化碳。如果人体长期吸入少量或一次性吸入较大量的一氧化碳时，可出现头晕、头痛、恶心、呕吐、口唇呈樱桃红色、心率快、烦躁等；严重者昏迷、瞳孔缩小、肌张力增加、频繁抽搐等；如救治不及时，可很快呼吸抑制而死亡。导致煤气中毒的常见原因包括烟囱堵塞、烟囱倒风、烟囱接头不紧、煤气管道泄漏、煤气阀门未关闭、炭盆取暖、汽车尾气等。

1.预防

受困道路上车辆，应注意不要长时间密闭车厢，以避免造成旅客中毒。灾区居民要注意以下几点：

（1）使用热水器、煤气灶具之前应闻闻有无煤气味，确定是否漏气，切勿安装于密闭浴室或通风不良处；

（2）应注意热水器或煤气正确的使用方法及保养，并注意是否呈完全燃烧状态。若产生红色火焰，则表示燃烧不完全，产生的一氧化碳较多；若产生蓝色火焰，则燃烧较完全，产生的一氧化碳则较少；

（3）注意检查连接煤气灶具的橡皮管是否松脱、老化、破裂、虫咬，防止漏气；

（4）自动点火的煤气连续点火未燃烧时，应稍等片刻，让已流出的煤气放散后再点火；

（5）居室内用煤火炉要安装烟道密闭完全的烟囱，用炭火盆取暖时要注意空气流通。

2.发生中毒后处置

家庭煤气泄漏时，要迅速关闭煤气阀门，打开门窗通风，切勿使用明火；一旦发生煤气中毒时，应迅速将患者转移到空气新鲜处，并注意保暖，严重中毒者，迅速拨打120急救电话送到医院救治。

（四）心脑血管疾病

人体受到低温刺激后，会导致交感神经兴奋，全身毛细血管收缩，使心、脑负荷加重引起血压升高，脑部缺血缺氧加速了血栓的形成，同时由于气候干燥，人体消耗水分多，容易造成体内缺水导致血液粘稠，血流减慢，因此寒冷天气急性心肌梗死与脑卒中发病率较高，尤其是老年人心脑血管病比较多发。

1.预防

（1）患心脑血管病的老年人在气候多变的秋冬季节一定要提高警惕，做好保暖措施，下雪、化雪的时候天气格外寒冷，尽量减少外出时间；

（2）尽量避免感冒和感染其他疾病，避免受凉，谨防受冷诱发新的疾病感染；

（3）寒冷天气外出时，注意防寒保暖，戴帽子、围巾和手套，并注意随身携带好相关急救药物；

（4）出行旅客要保持心态平衡，及时调节不良情绪，避免精神紧张和情绪激动；

（5）可适当运动，合理安排运动时间和控制好运动量。

2.处置

心脑血管病人发病后首先是对病人做一个简单的处置，把病人摆好体位，让病人平躺，揭开病人的上衣领扣子，使其呼吸通畅，并注意保暖；同时立即拨打120急救电话，尽快就医。

## 三、高海拔

（一）进入高海拔地区的人员身体要求

身体健康，年龄最好在18～40岁，无高原病史并无以下严重疾病：

1.各种器质性心脏病或心率快；

2.慢性肺功能不全；

3.癫痫及严重神经衰弱；

4.严重胃肠道疾病；

5.肝肾功能不全；

6.上呼吸道感染；

7.严重内分泌系统疾病，如糖尿病、甲状腺疾病。

（二）进入高原前需配备的用品和急救药品

1.急救箱：酒精、创可贴、纱布、绷带、棉球等；

2.常用药：止痛药、利尿药、腹泻药、广谱抗菌素、感冒药、降压药等；

3.救心丹、各种维生素、红景天等可提高氧含量的药物；

4.简易的便携式供氧装置;

5.防冻伤物品：防寒服、鞋、帽子及手套、冻伤膏等；

6.防紫外线：墨镜、遮阳帽、防晒霜等；

7.包装食品、饮用水等；

8.通讯设备。

（三）高原地区的注意事项

1.尽可能与有高原工作经历的人一起工作，避免单独行动；

2.有针对性地进行心理训练、高原常识和高原知识培训，做好进入高原地区的心理准备；

3.避免长时间、剧烈活动，高原劳动能力的卫生学限度：

（1）3000～4000米连续工作时间应小于6小时；

（2）4000米以上连续工作时间应小于4小时；

（3）4000米以上劳动周期不超过6个月，工作1年以上，应到低海拔地区休息2～3个月。注意休息，避免过度紧张，防止疲劳；

4.如果有条件，可采取集中供氧；

5.注意饮水，补充营养，戒烟戒酒；

6.注意保暖，预防感冒，防流鼻血；

7.我识别高原自主反应，一旦出现自觉症状，应立即停止工作并吸氧、休息。急性高原反应包括：头痛、头晕、恶心、呕吐、心慌、胸闷、气促、食欲减退、眩晕、鼻出血、手足发麻、手足抽搐、关节痛等。

（四）返回平原地区注意事项

从高海拔地区返回低海拔地区、从缺氧状态进入氧饱和状态可以产生“脱适应”反应（“醉氧”），出现疲倦、乏力、嗜睡、胸闷、头晕、食欲减退、腹泻等症状。应注意：

1.生活规律，保证足够睡眠时间，加强锻炼，经常参加户外活动，增加通气，多做深呼吸，忌熬夜、剧烈运动等；

2.多吃新鲜水果和蔬菜，忌暴饮暴食；

3.如多日无法缓解“脱适应”反应，请就医。

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# Part I Information on Post-disaster Health and Disease Prevention

## I Prevention and Alleviation of Injuries Caused by Disasters

### (I) Flood

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Avoid areas subject toSudden flooding. | · Be aware of water-covered roads and bridge.· Do not attempt to cross flowing streams. |
| Secure your home. | · Move household belongings to upper levels.· Turn off the main sources of electricity andgas in your home.· Do not operate any electrical equipment during a flood.· Do not use gas or electrical appliances thathave been flooded. |
| Follow advisories issued byauthorities. |  |

### (II)Earthquake

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Secure your home. | · Strap/bolt heavy furniture to the wall.· Check stability of hanging objects.· Store breakable items on the lowermost shelf. |
| Protect yourself. | · If you are in a building, go under a table ordesk and hold on to it while shaking occurs.· If you are in a moving vehicle, do not attemptto cross bridges, overpasses or flyovers which may have been damaged.· If you are outside, move to an open area.· Stay away from power lines, posts and concrete structures. |
| Stay calm and do not panic | · Take the fastest and safest way out of thebuilding in an orderly and calm manner.· Do not use elevators. Use the stairs. |
| Seek medical attention if injured. | · Go to the nearest health facility if needed. |
| Be prepared for aftershocks. | · Do not use elevators.· If the shaking stops, take the safest and fastestway out of the building. |
| Follow advisories issued byauthorities. |  |

### (III)Typhoon

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Be vigilant. Protect yourself. | · Stay indoors/at home and keep calm.· Listen to radio and television announcementsabout the weather disturbance.· Go to the nearest evacuation center if needed. |
| Prepare items which youwill need in case of anyemergency. | · Stock up on food, potable water, fuel, batteries, candles and first aid supplies.· Prepare a flashlight and a radio with fresh batteries. |
| Follow advisories issued byauthorities. |  |

### (Ⅳ)Land Slide

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Move to safe area. | ·Avoid areas subject to Land Slide.· If you meet Land Slide, move to higherground or evacuation center as soon aspossible. |
| Protect yourself. | · Ensure the food and water from pollution allthe time. |
| Follow advisories issued byauthorities. |  |

### (Ⅴ)Tsunami

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Move to higher groundaway from bodies of waterafter a strong earthquake. | · Observe for sudden lowering of the sea level or an unusual rise and fall of the sea level.· Do not stay in low-lying and seashore areas After an earthquake. |
| Follow advisories issued byauthorities. |  |

## II. Prevention and control of post –disaster Communicable diseases

### (I)Food and Water-borne Diseases

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Eat only clean and safefood. | · Eat food from sources that you know are safe.· Wash hands properly before preparing and cooking food.· Place food in clean and covered containers.· Do not store cooked food for a long period oftime. |
| Drink only safe water | ·Boil water(Let it stand boiling for 2-3minutes)·Disinfect water by using chlorine. |
| Follow advisories issued byauthorities. |  |

### (II) Diarrhea

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of diarrhea. | · Identify the sign and symptoms of diarrhea.· Passage of watery stools at least 3 times a day.· Excessive thirst.· Sunken eyeballs or fontanel. |
| Seek medical advice. | · Know the location of the nearest healthfacility/personnel where you can avail ofmedical services.· Bring the patient to the hospital if the signs and symptoms are present. |
| Follow the four rules for thetreatment of diarrhea. | · The four rules for the treatment of diarrhea.· Increase fluid intake.· Continue breastfeeding.· Take zinc supplement.· Refer to health professional immediately if child does not improve. |

### (III) Cholera

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of cholera. | · Identify the sign and symptoms of cholera.· Sudden onset of frequent painless watery stools.· Vomiting.· Rapid dehydration(eg. sunken eyeballs, wrinkled and dry skin) |
| Seek medical advice. | · Know the location of the nearest healthfacility/personnel where you can avail ofmedical services.· Bring the patient to the hospital if the signs and symptoms are present. |
| Eat only clean and safefood. | · Wash and cook food properly.· Keep food away from insects and rats.· Cover your food. |

### (Ⅳ)Typhoid Fever

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of typhoid fever.. | · Identify the sign and symptoms of typhoidfever.· Sustained high fever. · Body malaise(weakness).· Headache.· Loss of appetite.· Diarrhea/constipation and abdominal discomfort.· Blood in the stools. |
| Seek medical advice. | · Know the location of the nearest healthfacility/personnel where you can avail ofmedical services.· Bring the patient to the hospital if the signs and symptoms are present.` |

### (Ⅴ)Vector-Borne Diseases

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of Dengue. | · Identify the sign and symptoms of dengue.· Sudden onset of high fever which may last2-7 days.· Joint and muscle pain and pain behind theEyes.· Weakness.· Skin rashes.· Nose or gum bleeding.· Abdominal pain.· Vomiting of coffee-colored matter · Dark-colored stools.· Do not wait for any form of bleeding to occur,consult your health worker immediately. |
| Watch out for signs andsymptoms of Malaria. | · Identify the sign and symptoms of malaria.· Chills.· High-grade fever.· Sweating.· Severe headache. |
| Seek medical advice. | · Know the location of the nearest healthfacility/personnel where you can avail ofmedical services.· Bring the patient to the hospital if the signs and symptoms are present.` |
| Search and destroy breedingplaces of mosquitoes. | · Identify and destroy all possible breeding places of mosquitoes.· Cover water containers.· Clean water containers at least once a week.· Clean the surroundings. |
| Protect yourself frommosquito bites at all times. | · Sleep under mosquito net(insecticide-treatedmosquito net, if available)· Use personal protective measures from mosquito bites like: · Wearing long sleeves and long pants/pajamas. · Applying mosquito repellants. |
| Follow treatment regimen | · Take your medicines as prescribed.· Do not give aspirin. |

### (Ⅵ) Other Communicable Diseases

1.Acute Respiratory infections

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| If the child has cough, lookfor the other signs and symptoms that may signifypneumonia. | · Identify the sign and symptoms of pneumonia. · Fast or difficult breathing.· Abnormal breath sounds.· High Fever.· Inability to breastfeed/drink. |
| Seek medical advice. | · Know the location of the nearest health facility/personnel.· Consult health professional if the child has cough especially when the signs and symptomsof pneumonia are present.· Bring the patient immediately to nearest hospital if danger signs are present. |
| Follow treatment regimen | · Take your medicines as prescribed.· Drink plenty of fluids.· Come back on the scheduled return/follow upvisit. |
| Bring children 0-11 monthsto the BHS/RHU forimmunization. | · Follow immunization schedule.· Make sure infant received the complete immunization doses before the first birthday. |
| Bring children to theBHS/RHU for vitamin Asupplementation. | ·Vitamin A strengthens the immune and respiratory system. |

2.Measles

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Keep infant and children warm and dry. |  |
| Watch out for signs andsymptoms of measles. | · Identify the sign and symptoms of measles.· Generalized blotchy rash, lasting for 3 daysor more.· Fever(above 38 degrees Celcius)· And any of these: cough, runny nose, redeye/conjunctivitis. |
| Seek medical advice. | · Know the location of the nearest healthworker/facility· Consult health professional for the presence ofany signs and symptoms. |
| Follow treatment regimen | · Take your medicines as prescribed.· Return on the scheduled follow-up visit. |
| Bring children to theBHS/RHU for vitamin Asupplementation. | ·Vitamin A strengthens the immune and respiratory system. |
| Bring other children 6months-15 years old to thehealth worker for measlesvaccination. | ·Follow immunization schedule.·Complete immunization dose. |

3.Pulmonary Tuberculosis

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| For those undergoingmedication: Continue withthe prescribed treatmentregimen. | ·Consult the nearest health worker/facility.·Inform health worker of your condition.·Take your medications every day.·Return on the scheduled date of visit.·Submit sputum specimen for follow-up on thePrescribed date. |
| Watch out for signs andsymptoms of tuberculosis. | ·Know the signs and symptoms of tuberculosis:cough of two weeks or more without the following symptoms:·Fever·Chest or back pains not referable to anymusculo-skeletal disorders.·Hemoptysis or recurrent blood-streakedsputum.·Significant weight loss.·Other symptoms such as-sweating, fatigue,Body malaise, shortness of breath. |
| Seek immediate medicalcare. | · Know the location of the nearest healthworker/facility· Consult your health worker. |
| Practice proper coughing and sneezing technique. | · Cover your mouth when coughing and yournose when sneezing.· Do not cough nor sneeze directly in front ofother people.· Wash your hands with soap and water after covering mouth/nose when coughing/sneezing. |

4.Chickenpox

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of chickenpox. | ·Know the signs and symptoms of chickenpox.·Appearance of reddish skin lesions which later become blisters on the 3rd-4th day of fever.·Weakness.·Muscle and joint pains.·Sudden onset of fever. |
| Seek immediate medicalcare. | · Know the location of the nearest healthworker/facility.· Refer any person suspected of having chickenpox to the health worker/facility. |
| Prevent the spread of chickenpox. | · Notify health authorities of any suspected cases of chickenpox.· Isolate the patient. |

5.Tetanus

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Treat wounds. | · Wash wounds with clean water.· Keep wounds dry and clean. Use antiseptic, ifavailable. |
| Seek medical care. | · Know the location of the nearest healthworker/facility.· Consult the nearest health facility/worker. |
| Protect yourself from getting tetanus. | ·Keep wounds clean and dry.·Have yourself immunized against tetanus.·Inquire about need for subsequent tetanus toxoid immunization.·Return on the scheduled date of follow-up Immunization.·Wear protective footwear(shoes/slippers). |
| Watch out for signs andsymptoms of tetanus. | ·Know the signs and symptoms of tetanus.·Difficulty in opening mouth or swallowing·Stiffness of neck muscles.·Painful muscle contractions·Difficulty in breathing·Fever |

6.Leptospirosis

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for signs andsymptoms of leptospirosis. | ·Look for/identify signs and symptoms of leptospirosis. ·Fever.·Non-specific symptom of muscle pain.·Headache.·Calf-muscle pain·Reddish eyes for some cases.In severe cases:·Yellowish body discoloration.·Dark-colored urine and light stools.·Low urine output.·Severe headache. |
| Seek medical help. | · Know the location of the nearest healthworker/facility.· Consult if signs and symptoms of leptospirosisare present. |
| Follow prescribed treatmentregimen | · Take medicines as prescribed.· Return on the scheduled follow-up visit. |
| Prevent leptospirosis. | · Avoid swimming or wading in potentially Contaminated water/flood water.· Use proper protection like boots and gloves.· Keep surroundings clean and rodents-free. |
| Monitor and report cases ofleptospirosis in thecommunity to the BHS/RHU. | · Know the location of the nearest health worker/facility.· Know the signs and symptoms of leptospirosis. · Report any individual manifesting signs andsymptoms of leptospirosis. |

## III. Prevention and treatment of non-communicable diseases

### (I)Hypertension and Diabetes Mellitus

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Inform the health worker of your medical condition. | · Locate your nearest health worker.· Give your medical history.· Request for medicine supply. |
| Submit yourself for regular check-up. | · Submit yourself for regular blood pressure monitoring.· Submit yourself for regular blood glucosemonitoring. |
| Follow/continue treatment regimen. | · Take prescribed medicines regularly.· Exercise regularly as prescribed.· Avoid foods high in calorie, high in salt andHigh in fats.· Do not smoke.· Minimize stress. |

### (II) Bronchial Asthma

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Inform the health worker of your condition. | · Know the location of the nearest health facility/health worker.· Consult the nearest health facility/health worker during an attack.· Give your medical history. |
| Prevent asthma attacks. | ·Take your maintenance medicines as prescribed· Avoid exposure to dust, house dust mites.· Wear masks when exposed to dust. |

## Ⅳ Water, Sanitation, Hygiene Promotion and Environmental Health

### (I)Water Sanitation

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Drink only safe, potable water. | ·Boil water (let it stand boiling for 2-3 minutes)·Disinfect water by using chlorine·Use clean drinking water container providedwith cover. |
| Protect the sources of drinking water. | ·Do not pollute sources of drinking water.·Dispose of human and environmental wastesProperly in approved sanitation facilities.·Report or repair immediately any damage onthe water system.·Keep excess or waste water flowing away From the source of drinking water. |

### (II)Sanitation (Latrine)

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Dispose of all human waste properly. | ·Use a toilet or latrine when defecating andUrinating.·Locate the toilet 15-25meter away from theSource of drinking water.·Do not practice open defecation.·Defecate only in designated places. |
| Keep toilets/latrine clean. | ·Clean toilets and latrines every after use. |
| Practice personal hygiene after using the toilet. | ·Wash hands with soap and water after usingthe toilet. |

### (III)Personal Hygiene

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Practice proper hand washing. | ·Wash hands properly with soap and water.·Follow the proper hand washing procedure. ·Wet hands and wrist. Apply soap. ·Right palm over left, left over right.·Palm to palm, fingers interlaced.·Back fingers to opposing fingers interlocked·Rotational rubbing of right thumb clasped inleft palm and vice versa.·Rotational rubbing backwards and forwardswith tops of fingers and thumb of right handin left and vice versa. |
| Practice good personal hygiene. | ·Keep body clean.·Take a bath at least once a day if possible.·Wash hands before food preparation.·Wash hands with soap and water before andafter eating.·Trim fingernails and toenails regularly.·Change into clean clothes before going tosleep.·Cover mouth when sneezing, coughing.·Brush teeth after every meal.·Wash hands properly with soap and waterafter using the toilet. |

### (Ⅳ)Garbage Disposal

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Dispose garbage properly. | ·Do not throw or dispose garbage in open fieldsand bodies of water.·Throw garbage in refuse bin and when full,dispose it in designated areas.·Do not burn waste, including plastic materials.·Put waste into garbage cans/receptacles withTight-fitting cover. |
| Practice waste segregation. | ·Practice the 3R’s:reduce, reuse and recycle.·Separate biodegradable from non-biodegradable waste materials.·Collect, store and dispose waste properly.·Sell recyclable waste(plastic, glass, paper, etc)To buyers.·Use food waste as animal feeds. |
| Dispose biodegradableWastes properly by burying or composting. | ·Do not burn wastes.·Seek the assistance of RHU where to dispose hazardous waste. |

### (Ⅴ)Vector Control and Drainage

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Keep your house or evacuation center clean. | ·Keep your surroundings clean.·Dispose waste properly.·Search and destroy possible breeding placesof mosquitoes. |
| Keep your drainage/canal clean. | ·Do not throw waste in the drainage, canal or any open spaces.·Drainage canal should be covered to eliminateBreeding place of insects and rodents. |

## Ⅴ.Nutrition, Food Safety and Food Aid

### (I)Breastfeeding

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Breastfeeding your infants | ·Exclusively breastfeeding infants 0 to 6 months old.·Breast milk provides all the nutrient and waterneeds of infants 0 to 6 months old.·Breastfeeding helps protect infants from certain diseases and disease conditions.·The more you breastfeed, the more milk youproduce.·If the infant is separated from the mother, askThe assistance of another breastfeeding mother. |
| Continue breastfeeding up to 2 years and beyond. | ·Breast milk is best for children up to 2 years ofage and beyond.·Give nutritious food in addition to breastfeeding. |

### (II)Nutrition, Food Safety, Food Security

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Improve nutritional quality of donated food commodities. | ·Add egg, cooking oil, vegetables and fruits,if possible. |
| Practice food safety toprevent water and food-borne illnesses. | ·Eat only safe food. When in doubt of the safetyof the food, do not eat.·Keep foods in clean and covered containers. |
| Prevent and treat malnutrition. | ·If you are pregnant ask for iron supplementsfrom health and nutrition workers.·Bring the child to health and nutrition workersif he or she does not seem to grow well/gainweight.·Avail of micronutrient supplementation. |
| Ensure food security. | ·Prepare your family to look for alternative source of foods.·Prepare stockpile of foods such as rice, canned foods, noodles, dried fish and other foods that do not spoil over long periods of time.·Start vegetable gardens and raise small animalsto provide source of food for the family and community. |
| In addition to breast milk, give older infants(6 months and above)and young children foods that are nutritious, safe, and clean. | ·Prepare and feed supplementary foods regularly like rice gruel.·Add meat or fish or poultry and vegetables.·Add two drops of cooking oil to the rice gruel.·Make sure that the plate and eating utensils are clean. |

### (III)Mental Health and Psychosocial Concerns

|  |  |
| --- | --- |
| Key Behavioral Message | Sub-Messages |
| Watch out for possible signs and symptoms of psychological distress in persons. | ·Identify the possible signs and symptoms ofpsychological distress in persons. ·Mood swings ·Depression ·Changes in personality·Find out where you can get basic informationand assistance on mental health and psychosocial concerns. |
| Refer patients with pre-existing mental disabilities/disorders and those suffering from psychological distress. | ·Know the location of the nearest health facility/personnel.·Report persons with pre-existing mental disabilities or illness to evacuation centerauthorities or health personnel. |
| Participate in community meetings, gatherings, discussions. |  |

# Part II Key Points on Health and Disease Prevention Knowledge to the Public

##  I. Earthquake

###  (I) Preparation before earthquake

1. Check and strengthen houses. Strengthen the houses which are not quake-proof and evacuate from houses which are not suitable for strengthening. Pull down bulky housing decorations, such as parapet walls and decoration part on top of the gate.

2. Place furniture and materials reasonably. Fasten bulky furniture in case that they hurt people when toppling over. Empty the space under stout furniture for people to hide themselves in earthquake. Place light objects on the top of heavy ones. Take down hanging objects on wall in case that they hurt people when falling down. Clean sundries at the doorway and passageways. Move flowerpots and sundries from curtain wall on balcony. Put flammable, explosive and toxic objects at safe place.

3. Prepare necessary anti-seismic objects. Prepare a family anti-seismic bag with food, water, emergency lamp, drugs, rope and radio. Put the bag at a place where it is easy to be reached.

4. Conduct family earthquake drill. Practice emergent evacuation and one-minute act of rescue.

###  (II) Self-rescue in face of earthquake

1. Do not hurry in face of violent earthquake. In destructive earthquake, the building will be destroyed several seconds or over ten seconds after you feel the shock. You shall make prompt decision on what to do to safeguard yourself in the short time. If you live in one-storey house, you can run to the outside rapidly. If you live in high building, do not jump off, but cut off the switch, turn off the gas and hide at narrow space, such as bathroom, desk or bed. After the earthquake, evacuate from the house immediately to avoid aftershock.

2. Find room to hide yourself if you are at a place filled with people. It is a big mistake to be panic when coming across earthquake at a place filled with people, such school, store and cinema. You shall hide yourself under desk, chair or other stout objects. Evacuate from the place in order after earthquake.

3. Get far away from dangerous zone. If you come across earthquake in the street, protect your head with hands and get away from the building to the open street. If you come across earthquake at outskirts, get away from cliffs, steep hills, river banks and high tension lines. Moving cars and trains shall be stopped.

4. Conserve your strength if you are buried. Try to be calm and try to save yourself if you are buried in earthquake. If you can not help yourself out of danger, conserve your strength, try to find water and food, create conditions for survival and wait for rescue patiently.

###  (III) Disease control after earthquake

1. Do not have contaminated food and water. If it is possible, ask for disinfection tablets from relevant local department to disinfect the drinking water and then boil the water before drinking.

2. Do not share towel, tableware and water for washing face with others. Disinfect used tableware with boiled water if it is possible.

3. Actively participate in patriotic sanitation movement. Rectify your local environment and dispose household garbage and excrement properly. Do not dump garbage and excrement near sources of water. If it is possible, disinfect the surrounding environment with bleaching power. Disinfect pondings breeding mosquitos with dichlorvos. Meanwhile, place some rodenticide baits to prevent disease spreading caused by rats.

4. Bury animal carcasses far away from the shelters and sources of water. It is advised to burn rotten carcasses before burning them.

5. Actively participate in activities held by local community on introduction of health knowledge. Get to know basic disease prevention knowledge.

6. If you fall ill, go to a doctor in time. If you find your relatives or friends have symptoms of infectious disease, report to health and disease control department.

7. Have correct understanding of infectious diseases. Though infectious diseases may explode after earthquake, with correct and positive prevention method, spreading of infectious diseases is not likely to extend in large area. In another word, infectious diseases can be prevented. You don’t have to be worried if your relatives are infected with minor illness because the minor infectious diseases are not likely to be spread in large area as long as they are treated in time.

8. Relieve mental pressure. Keep a good and correct state of mind by keeping routine activities, solving daily conflicts timely, relaxing yourself, seeking help from relatives, friends or psychological professionals, participating in recreational activities and balancing diet and nutrition.

##  II. Floods

###  (I) Preparation before floods

1. Follow forecast of rain and water regime.

2. Get familiar with hidden dangerous areas listed in local flood prevention plan and route map for emergent leaving and contact information.

3. Families at low-lying areas shall prepare simple lifesaving appliances.

4. Keep your cellphone and telephone switched on in order to receive relevant information.

5. Prepare for evacuation. Turn off gas and switch off power supply before evacuation.

6. In evacuation, follow directions, help each other and do not return until dangers have been relieved.

###  (II) Self-rescue in face of flood

1. When flood comes, people who are unable to evacuate shall run to hillslides, highlands, buildings and platforms or climb to roofs, high buildings, trees and walls.

2. If the flood keeps going up and you can not hide yourself at the temporary shelter, make full use of prepared lifesaving appliances to escape, or get yourself some floatable door sheets, chairs and desks, beds, or big polyfoam to make a raft to escape.

3. If you are surrounded by flood, try to contact local flood defense department to report your position and situation and seek help. If you find any high tension line tower topples down or electric wire drops down, get far away from them to avoid direct electric shock or electric due to ground step voltage.

Note: do never escape by swimming or climb on electric pole, iron tower or roof of mud house.

4. If houses at low-lying areas submerged or surrounded by floods, firstly, direct family members to move to solid highlands; secondly, send SOS signal; thirdly, move to a safe place with simple lifesaving appliances. When moving, follow the principle of “As near and high as possible, rapid, in order and safe”; leave objects behind people; the aged and children go first, then other people; draw up route and place for evacuation in advance and make clear the organizing members and their responsibilities.

5. If you have been carried away by flood, try your best to catch hold of fixed items or floatable items to look for chance to escape.

6. When the flood fades away, take actions on disease control to prevent diseases.

7. Self rescue and rescue of people drowning in water by others. In case of drowning, if you can not swim, take the following actions. Lie on your back, incline your head back and keep your nose above water to breathe. Expire lightly and inhale deeply. Do not be panic or wave your arms up and down violently. For people who can swim, if your lower abdomen cramps, first keep calm, then take backstroke and bend your cramped leg towards your back, and then swim to the bank. If you are going to rescue a person drowning in water, swim rapidly to the person and rescue him/her from behind or throw wooden board, life buoy, pole, tire or polyfoam to the person and then help him/her get on bank.

###  (III) Disease control after flood

In order to keep fit and prevent diseases, residents in disaster area shall observe the following instructions.

1. Pay attention to sanitation of drinking water. Do not drink raw water, but drink boiled water or bottled water meeting sanitary standard. Jar, bucket, pot and basin for holding water must be clean and washed regularly. Disinfect temporary drinking well water, river water, lake water and pool water. Bleach turbid and contaminated water with alums. Bleaching power shall be kept at dark, dry and cool place (kept in brown bottle with cap).

2. Pay attention to sanitation of food. Do not eat rotten and bad food or food that has been soaked by contaminated water. Do not eat leftovers or raw and cold food. Do not eat drowned or ill livestock or aquatic products. Separate cooked food from raw food. Clean and disinfect bowls and chopsticks before using. Do not buy food from stalls with no hygiene license.

3. Pay attention to environmental sanitation. Clear off sludge out of the house and pave the land with gravels or new soils. Clear off sludge in the well and disinfect well water with bleaching powder. Wash and clean the furniture before moving them inside the house. Renovate toilet and lot for livestock. Do not relieve yourself at anywhere. Discharge excrement and garbage at designated place.

4. Reinforce management of livestock. Rear pigs in pens and keep pig lots clean. Prevent urine of pigs from flowing to water and reuse pig manure after fermentation. Keep an eye on animals, such as cats and dogs. Sprinkle mosquitocide regularly at lots for livestock. Dispose excrement timely and discharge to integrated manure pits.

5. Guard against and kill flies, rats and mites. Sprinkle pesticide to kill maggots. Indoors, kill flies with flyswatter and cover food with shield. Animal Carcass shall be buried deep in ground and the soils shall be compacted. Rats are most likely spread at places filled with people. Report to relevant department timely if you find the population of rats increases in large number. Keep the ground of the house and around the house dry and clean. Do not sit, lie or rest on pile of mow.

6. If you do not feel well, go to see doctor in time. Patients with fever and diarrhea, seek help from doctor immediately. Follow the doctor’s advice, cope with working staff if you have to be quarantined and remember the usage of drugs.

7. Keep your hands clean. Do not rub eyes with hands, especially dirty hands. Try not to share towel, washbasin and handkerchief with others. If someone has to share a washbasin with a patient, the patient shall wait until the health people has used the basin and clean the basin with soap.

8. Wear a face mask in contact with patients and wash and disinfect the face mask every day. If your skin and mucosa have been contaminated by blood, urine and oral secretion of patients, clean and disinfect with rubbing alcohol immediately. Environment and objects contaminated by blood and excrement of patients shall also be disinfected immediately.

9. To avoid fester of skin, try to keep your skin clean and dry and wipe off sweat with towel. Use some prickly heat powder at wrinkles on your skin. If you are going to work in water, rest in every one to two hours, dry your feet and expose in sunlight for a moment. Remember to dry your feet and wear dry shoes when coming out of water. If skins on your feet begin to ulcerate, do not work in water if possible. Try to wear boots. People with skin disease on feet, try not to work in water.

10. In schistosmiasis infected area, the best method to prevent schistosmiasis is to keep away from infected water. Before touching infected water, cover your skin with onitment for protection, wear protective clothing, such as rubber boots, rubber gloves and rubber pants. If you have touched infected water, go to check at relevant department in time. Accept medical treatment once you have been found infected.

11. Look out mental health. Keep a positive state of mind. While surrounded by floods, try to find something interesting to do and keep a regular life.

12. Pay attention to the nursing of special population. Try to create a good environment for the aged, the weak and the illed to reduce mortality.

## III. Typhoon

###  (I) Preparation before typhoon

1. There might be suspension of supply of water and electricity due to typhoon. Therefore, stock some daily necessities timely.

2. Strong typhoon may blow off objects from high buildings. Therefore, fix flowerpots, outdoor air conditioners, rain sheds, bits and pieces on construction site.

###  (II) Self-protection in face of typhoon

1. Follow weather forecast from TV and radio. Take prevention measures and prepare for evacuation following instructions of governmental departments.

2. When typhoon comes, do not take shelter from rain at cars, old houses, work sheds, temporary buildings, scaffolds, wire poles, trees, billboards, iron towers, etc.

3. When typhoon comes, try not to go out, do not take an elevator, cut power supplies of all electric appliances in the house and get away from doors and windows.

4. Storms coming with typhoon may cause geological disasters, such as landslide, debris flow which may hurt people. Therefore, people at geological-hazard-prone areas and storm-intense areas shall be alert and evacuate on time.

###  (III) Disease control after typhoon

1. Take special care when clearing damaged houses, especially when disposing debris. Wear firm shoes or boots, long sleeved clothes, masks and gloves.

2. If you have been scratched by nails, metal or grasses, go to see doctor in time to treat the wound and inject tetanus drugs if necessary.

3. Do not eat food been buried or soaked by floods.

4. Do not use charcoal or fuel generator in order to avoid carbon monoxide poisoning due to poor ventilation.

##  IV. Mountain torrent and debris flow

###  (I) Preparation before mountain torrent and debris flow

1. Examine the place you are going to reside in advance. Make sure vegetation there has not been destroyed, no slide has occurred before, the building or road is not on steep hill or at the bottom of slope or valley or along river because surface soil at these places has been washed away and water flows over these places. You can consult local residents or government about the above information. If there are the above conditions, you shall consider moving.

2. People living at places which are possible to encounter slide or debris flow shall clearly know emergent evacuation plan when debris flow comes.

3. Find possible places to hide yourself around your house, such as trees on slope, wire poles, walls, fences, new caves and open fields.

###  (II) Self-rescue in face of mountain torrent and debris flow

 1. Follow weather forecast from TV and radio. Take prevention measures and prepare for evacuation following instructions of governmental departments.

 2. When rainstorm is lasting, pay close attention to signals of slide and debris flow, evacuate if necessary and follow directions of governmental departments and do not carry bulky items in the process of evacuation.

 3. Pay close attention to precursory signals of debris flow. Sudden rise or drop of water level might be a signal for the coming of severe debris flow from upstream. Rumbling might be the signal for upcoming debris flow or slide.

 4. While driving, keep in mind that the road ahead might have been blocked by debris flow.

 5. When debris flow occurs, leave the route of the debris flow rapidly and run to safe places towards the direction vertical to the route of the debris flow.

 6. Torrent and debris flow may visit the disaster area again, so keep away from the area.

1. When searching for injured or trapped people, keep away from the route of the debris flow.

### (III) Disease control after the disaster

 1. Take measures to protect yourself when clearing houses and objects. Wear firm rubber shoes, gloves and masks. Do not take children to clearing site.

 2. Disinfect objects been cleared. Your can disinfect the objects through disinfectant with chlorine, boiling and exposure in sun. Throw away objects which are water sucking, not easy to be cleaned or disinfected.

 3. Look out sanitation of drinking water. Do not drink unboiled water. Make sure to disinfect temporary drinking well water, river water, lake water and pool water.

 4. Look out sanitation of food. Do not eat food taken out from sludge.

 5. Pay attention to environmental sanitation. Collect wastes and then burn and bury them. Disinfect sludge which can not be cleared in a short time with adequate bleaching power.

##  V. Drought

As drought usually lasts for a long period, people at the drought-hit area may face short of supply of water and food. They may suffer heatstroke in hot season. Therefore, measures to prevent disease during drought are as follows:

(I) Keep a normal state of mind. Try not to lose your temper and become a victim in traffic accident or fighting.

(II) Cut down outdoor activities, avoid exposure in sunlight and drink as much water as possible.

 (III) Pay attention to the use of fire. Do not throw cigarette butts at your will and do not burn paper or candle outdoors. No fireworks and crackers. Do not cook with firewood, such as straw at rural area.

 (IV) Drinking water can not be used without clarification, filter and disinfection. Do not take unboiled water, cold dish or decayed food. Overnight food can not be eaten without thorough heating. Fruit can not be eaten without cleaning and peeling.

 (V) Do not eat dead poultry. If you find any dead poultry, report to local government or agricultural or health department timely. Disinfect and bury the dead poultry under the instructions of technical staff.

(VI) Go to see doctor if you are ill. If you find same symptom in two persons around you, report to medical staff.

# Part III Key Points on Health and Disease Prevention Knowledge to Professionals

##  I. Earthquake

###  (I) Major public health problem

1. Direct influence on public health

(1) A large number of casualties, mainly mechanical damage and death, caused by the building collapse, landslides and others.

 (2) Contagious diseases mainly caused by dirty drinking water and food, large-scale population migration and aggregation, inadequate sanitation, vector-migration and exposure etc.

 (3) Accidents mainly caused by the heat, dog injuries, burns, frostbite, CO poisoning, food poisoning, chemical poisoning, and radioactive contamination.

 (4) Chronic non-infectious disease mainly caused by life and living environment changes which contribute to the occurrence of cardiovascular disease, hypertension, diabetes and others.

 (5) Mental and psychological traumas mainly caused by sudden earthquakes, psychological response to catastrophic emergency and the short-term psychological communication barriers due to living and living environment changes.

2. Indirect influences on public health

(1) Undermine the public health service system including immunization, maternal and child health, mental health, drug and vaccine supplies and other normal working order;

(2) Increase the potential of disability like mechanical injury caused by disability; gas gangrene caused by amputation; pneumoconiosis caused by inhaling collapsing building dust and mental traumas.

(3) Disrupt normal life that the body defenses are weakened, mental and emotional disorders occurs and a variety of disorders can be easily caused.

(4) Ecological environment is damaged which may frequent the occurrence of some infectious diseases. Manure and waste transportation and sewage discharge systems and urban health facilities are all destroyed, resulting in feces, garbage accumulation and a large number of flies.

3. Damage to public health system

 (1) Public health service abilities are damaged, on the one hand is the damage to public health services including the destruction of the buildings, instruments, equipment and laboratories and the missing of data and technical information; on the other hand is the damage to health service staff including the missing individuals and family members, damaged family properties and inadequate personnel due to long-term fatigue.

 (2) Health service demand is increased for the reason that a large number of injuries require emergency cure and a lot of mentally injured patients needs ease. Therefore, a large number of medical personnel and medical supplies like medical instrument and blood are required in a short period of time.

4. Indirect influence on public health service system

 (1) Public health infrastructure is destroyed. The damage to the water, electricity, fuel, communications and drainage systems impact the public health service capacity and disrupt the work order;

 (2) Broken transportation and communications disruption have negative affect on timely health services;

 (3) Excessive concerns and expectations of the media and communities from home and abroad increase the work pressure, intensity and difficulty of the public health service.

###  (II) Major health emergency measures

1. Emergency cure of the wounded

Earthquake disaster is deadly and sever earthquakes may result in serious casualties. Emergent rescue of the injured is the paramount work of the health departments, especially of the medical organizations.

2．Strengthening drinking water health measures

 (1) Temporary water supply sources should be selected and protected in the general principle of deep groundwater the best and springs, shallow groundwater and surface water the second.

(2) Supervision to the temporary water supply shall be strengthened. In earthquakes, in addition to part of the repaired water supply, temporary water can be supplied mainly in three ways: with fire hoses, with water cars and fetch water with self-prepared tools. The supervision to the temporary water supply is also necessary to ensure clean water.

(3) Dead alkalosis shall be prevented. During an earthquake, a large number of human and animal corpses decomposed by saprophytes (especially under high temperatures in summer) contaminate the environment and water and cause dead alkalosis. To prevent poisoning from drinking dirty water polluted by corrupted corpses, the buried corpses around water sources shall be strictly removed and disinfected. If safe clean groundwater is difficult to find, it is required to disinfect the corpses and local soil before burying. Chloride of lime can be sprayed between the layers of corpses to prevent from polluting under groundwater.

 (4) Drinking water shall be strictly purified and disinfected. Presently chloride-based chemicals are the main thing used for disinfecting drinking tank water, well water in direct investment and continuous dosing ways.

3. Strengthening food health measures

 (1) More attention shall be paid to the health of collective canteen, temporary food supply stands, food sold on the street and foreign aid food. The control of the food production and operation organizations shall be strengthened to prevent pollution from bacteria, mold and mold toxins, parasites and other insects, chemical pollution.

 (2) Before restoring operation, the food production and operation organizations shall be thoroughly cleaned, disinfected, repaired and report to the health monitoring organizations for permission after health re-examine.

 (3) During special period in disasters, with no risks of acute poisoning and food-borne diseases, safe food shall be distributed to the victims. General principles shall be adopted to dispose of the contaminated food that the contaminated and non-contaminated food shall be separated, the non-contaminated can be allocated and the contaminated shall be disposed of separately in light of pollution sources.

4. Strengthening environmental health measures

 (1) Build temporary living places and be cautious of the living health conditions.

 (2) Build latrines, collect and dispose of the feces and garbage.

 (3) Dispose of the corpses scientifically.

The corpses shall be disposed of in 5 procedures: spraying, package, bundle, transportation and burial.

① Medicine praying: Upon digging corpses, spray medicine like lime water and black ash to absorb odor substances. Mixture of 1% silica and sawdust can also be used to remove odor of hydrogen sulfide and 3% ~5% Lysol water is also effective. Calcium hypochlorites, calcium hydroxide mixed with bleach are better choices to remove odor and disinfect. Since corpses are sources of infection, it is recommended by WHO that corpses be soaked with paraffin, incinerated locally thus to avoid epidemic.

② Package: Pack the head with packing bags and then pack the entire corpse with covers or wrap the corpse with plastic bags and seal it. Standardized special corpse bags are better choices in fully-prepared conditions.

③ Bundle: Wrap the packed corpses at the head, waist and legs to facilitate movement and avoid falling apart.

④Transportation: Remove the bundled corpses timely with standard health vehicles and avoid polluting the environment in urban areas. Before loading, cushion the vehicle with sand or plastic cloths to prevent from pollution.

⑤ Burial: Choose burial places outside the city. With no damage to city image and no pollution to water sources, bury the corpses 1.5~2m deep under the ground and top it with soil and lime. The temporarily buried corpses in the city shall be removed to and buried in places outside the city to improve the urban environmental health landscape.

5. Infectious disease control

 (1) Rebuild the disease supervision system. The supervised subjects include infectious diseases stated by the law, temporary housing and population mobility, the occurrence of other major diseases, the quantity of rodents and vectors, etc.

 (2) Rebuild safe drinking water system..

 (3) Strongly promote patriotic public health campaign and have a good control of the media.

 (4) Detect and dispose of the infection, strengthen separation and cure of the patients and conduct sterilization and disinfection in epidemic points (epidemic zone) at any time,

 (5) Implement emergency immunization.

6. Health education.

Health promotion information shall be made and printed to promote emergency measures and requirements regarding post-disaster water sanitation, food hygiene, environmental health, infectious disease control and others. Make full use of mass media (such as radio, television, newspapers, etc.) and other forms (blackboard news, posters, performances, lectures, etc.) to promote post-disaster health and disease prevention knowledge, and strive to improve the health knowledge of the victims.

##  II. Flood

###  (I) Major impact on public health

1. Direct impact on human health

(1) Casualties. Timely transfer can avoid direct injury or death.

 (2) Epidemics.

 ① Impact of sources of infection: Water sources and drinking water facilities can be flooded or destroyed, making it hard for people in disaster areas to get access to safe drinking water. In the mean time, floods change the source of food and its processing and storage conditions. Food safety risks in the disaster areas can lead to high occurrence of cholera, typhoid, dysentery, hepatitis, and other intestinal infectious diseases. In certain infectious focus, the migration and expansion of rodents and other pathogen hosts to larger areas bring changes in rodent populations. Changes in vole habitat cause leptospirosis, epidemic hemorrhagic fever, and other diseases of natural focus. Floods have a direct impact on infectious focus of blood flukes. For instance, migrant workers that fight a flood and expose to contaminated water in flood prevention and emergency manoeuvring often suffer acute schistosomiasis.

② Impact of route of transmission: Floods change the ecological environment and expand the breeding grounds for insect vectors. The increase in the density of various insect vectors often leads to some infectious diseases.

③ Impact of susceptible populations: Population migration caused by floods enlarges susceptible populations. As a result of the flood, the source of infection is shifted to non-infected areas and susceptible populations enter into the infected areas. Migration of population as such can easily lead to the prevalence of diseases, like influenza and measles. Other diseases, like conjunctivitis and skin diseases may also expand as a result of increased density and contacts of the population. Susceptible population gets larger due to poor living conditions where people in disaster area move out of their flooded housing, into shabby tents, and expose in scorching sun in daytime and unfavorable outdoor conditions at night. Infectious diseases also increase, especially among the frail, the elderly, children, and patients with chronic illness, because of poor nutritional status, reduced immunity, and decreased disease resistance.

 (3) Chronic non-communicable diseases: Most floods occur in hot rainy seasons when weather conditions are extremely bad and people in disaster areas are vulnerable to feelings of restlessness, emotional anxiety, mental stress, and psychological distress due to crowed and crude living conditions. Non-infectious diseases and chronic infectious diseases, such as tuberculosis, hypertension, coronary heart disease, and anemia can recur or worsen as a result of affected regulatory function of human body.

 (4) Accidental injuries that are mainly caused by accidental events, such as drowning, electric shock, heat stroke, trauma, poisonous bites or stings, snake bites, food poisoning, and pesticide poisoning.

 (5) Skin diseases, such as dipping dermatitis ("bad feet", "rotten crotch"), solar dermatitis, insect bite dermatitis, and cercarial dermatitis.

2. Indirect impact on human health

(1) Environmental damage

 Floods inundate farmland, houses, and low-lying lands, leading to large-scale migration of people in disaster areas and changes to community structure and habitats of various biota, thus breaking the original ecological balance. With the drowning or migration of voles to high lands and villages, the proportion and structure of voles and rats change considerably. Village toilets and septic tanks are flooded, carcasses of plants and animals decay - all lead to the breeding of mosquitoes and the gathering of a variety of pests.

 (2) Water pollution

Floods cause varying degrees of damages to water supply facilities and sewage conditions, such as water plants, drinking water wells, toilets, garbage, livestock barns and stables. Wells and tap water sources are most polluted. A lot of floating debris and animal carcasses are left in the water, decay and give out stench due to the elevated temperature and sunlight. Water pollution is mainly caused by biological pollution that reflects in the increase of the number of microbial indicators and the decrease of drinking water security that can lead to outbreaks and epidemic of intestinal infectious diseases. Floods bring a large amount of sediments into water, causing poor sensory properties of water, turbidity, and suspended solids. Due to delayed removal or handling, industrial waste water, residue, pesticides and other chemicals in some rural and urban industrialized areas can cause chemical pollution to local water environment when flooded. Leakage of toxic chemicals stored in certain districts can cause a wide range of chemical pollution.

 (3) Food contamination. During the floods, the wide range of channels and sources of food contamination can deal severe impacts on all aspects of food production and operation or lead to outbreaks of large-scale food poisoning and foodborne diseases. First, contamination of raw materials of food. A large quantity of food materials can rot, corrupt and degenerate when various food warehouses are flooded, damped, or exposed to rain. Field crops long-time soaked in the flood and high temperature and humidity conditions more easily rot or corrupt. Second, contamination of food production and management process. All kinds of food production equipment, food packaging materials, and containers are easily contaminated when flood comes. The contamination can be more severe if the production equipment, facilities, toilets, sewers, and wells are flooded. Lacking of clean water in food enterprises, the contaminated water then pollutes raw materials of food. Three, deterioration of living conditions and environment. There are a variety of animal carcasses, human and animal feces, and all kinds of garbage in the water. Rodents move to food factories, warehouses, and residential areas due to the flood. Victims temporarily gather at highlands and dams where the population density is high, mixed with livestock, thus an environment for easy breeding of flies and mosquitoes. Victims of the flood are short of health protection facilities, clean water, clean food containers or cooking utensils. All these situations can be possible sources of food contamination. Transient food shortages can occur in the initial period of the flooding when hungry victims will eat dead livestock, fish, shellfish, and other wild animals floating in the water. Fourth, food contamination in transport and storage. When floods occur, a variety of vehicles are temporarily used for the transport of relief food. Most of these vehicles are not designed specially for food transport and lacking of necessary protective equipment. Therefore, the food is subject to contamination. Besides, due to the lack of suitable warehouses for storage of food, most of the relief food is temporarily covered with awning or piled up in tents, thus easy to get moldy or rotten. Fifth, the quality of relief food hard to guarantee. Due to the difference in sources, channels, packages, as well as storage and transportation periods, some of the large quantity of relief food transported from afar always spoils. Relief food like fresh or cooked meat and fish, shellfish, frozen meat and fish are always exposed to contaminating microbes that are fast in reproduction and can easily lead to food spoilage and foodborne diseases in the absence of refrigeration and cold storage facilities. Six, impact on food and health management system. During the flooding, the existing food and health management system divided according to administrative regions is limited in power, overwhelmed, or loose in the organizing bodies as a result of the flood. It can directly affect food and health management and promotion and guidance of food hygiene. Besides, it can be an important factor of food contamination that during the flooding, the regulatory monitoring of food hygiene in production operations and market places may be out of control and lead to a significant decline in sanitary quality.

 (4) Breeding of biological vectors. First, breeding of mosquitoes. At the end of the disaster, residual water potholes, a breeding ground for mosquitoes, increase after the flood recedes, hence the increase in mosquito density. Moreover, degradation of people's living conditions, increases in population density, intervene of livestock, and poor protection lead to more mosquito bites and mosquito-borne diseases. Second, breeding of flies. In flooded areas, high dikes and lands become gathering places for people, poultry, and livestock. As feces and garbage can not be timely removed, , the living conditions deteriorate and provides a good breeding habitat for flies. The rapid increase in fly density and the frequent contacts give rise to high occurrence rate of fly-borne diseases. Third, increased contacts with rodents. As rodents move to higher places in the flood, voles and rats mix together and have more opportunity to contact with people, hence the outbreak and epidemic of rat-borne diseases.

 (5) Reduced accessibility to medical and public health services. In flooded areas, the original order of normal health services is destructed, service facilities and equipment damaged, and medical and health service staff is also affected. Consequently, people in disaster areas may not receive timely treatment and routine public health services, such as maternal and child care and planned immunization.

3. Destruction of the health service system

(1) Impact on health service abilities. Floods may make housing of medical and health services, facilities and equipment, and drugs soaked and can not be used, thus affecting the health service abilities in the affected areas.

 (2) Changes in the needs of health services. Floods change the normal living environment of affected people. They are prone to various diseases with the deterioration of the living conditions.

4. Indirect impact on the public health service system

 (1) Destruction of water supply facilities. Floods can destroy the water supply and electricity facilities in urban areas, as well as traditional water sources, leading to a lack of drinking water and impact on the normal functioning of the public health service system.

 (2) Floods can also submerge roads and wash away communications facilities, thus affecting timeliness of medical and health services.

###  (II) Major health emergency measures

1. Patient rescue and treatment

As floods can cause serious casualties, the health sector shall organize specialized medical team to the front line for rescue and treatment and to reduce casualties. It should grasp the epidemic dynamics and provide treatment to patients with infectious diseases, while taking appropriate measures to prevent the occurrence of second-generation patients.

2. Strengthening health measures of drinking water

(1) Selection and protection of water source. Drinking water intake points should be located in upstream of the flood or waterlogging areas less polluted. Certain areas shall be set aside where waste, sewage and garbage are strictly prohibited. Water intake pier can be built in areas where conditions permit so as to take water a certain distance away from the shore.

 (2) Selection of water source with the receding of flood. Well water should be used for drinking where running water is not available. Wells should include well platform, brandreth, well cover, and facilities like toilets and pigsties that may contaminate groundwater shall not be built 30m around the well. The existing water supply pipelines can be extended when conditions permit.

 (3) Purification and disinfection of drinking water. Boiling is a very effective method of sterilization and can be adopted where fuel is reachable. Filtering can also be a choice when conditions permit. However, during floods, disinfectants are most used in the disinfection of drinking water.

 (4) Strengthening disinfection of water supply facilities. Water source or supply facilities once flooded shall be cleaned and disinfected and reused when bacteriological indicators meet relevant standards. Wells flooded shall be dredged, washed, and disinfected. First dry the well, remove sludge, wash the wall and bottom of the well with clean water, remove the foul water, and disinfect the well before use with disinfection methods normally applied when the water returns to normal level.

3. Strengthening food safety measures

(1) The following food poisoning shall be especially prevented in in flood-affected areas.

① Food poisoning caused by mycotoxin of moldy food: It is often caused by eating moldy rice and wheat.

② Bacterial food poisoning: It is often caused by animal food, meat of dead livestock and poultry, and cooked food (such as meat and eggs) that is not well kept in cold storage or stored for a long period of time (like rice and vegetables).

③ Chemical food poisoning: It is generally caused for the ingestion of toxic substances. As a result of changes to the environment and limitation of temporary living conditions in flood-stricken areas, pesticides, nitrites, and other industrial chemicals are susceptible to be eaten by mistake.

④ Toxic plant and animal food poisoning: It can be caused by eating pig thyroid gland, adrenal gland, toxic fish, or soybean milk that is inadequately heated, lentils, bitter almonds, sprouted potatoes, and poisonous mushrooms.

(2) On-site measure for food poisoning

① The patient's treatment and reporting: The patient's emergency treatment mainly includes emetic, gastric lavage, enema, as well as symptomatic treatment and special detoxification drug treatment. Content of food poisoning report includes location, time, number of people, typical symptoms and signs, treatment, food that caused poisoning, and measures taken. Specimen of the patient shall also be collected for inspection.

② Stop eating food that causes poisoning: Seal up food that caused or suspected to have caused poisoning on site and can only be eaten again when confirmed as not poisonous. Notice shall be sent out to recover or stop the eating of food that caused or suspected to have caused poisoning in other places.

③ Food and environmental disinfection work: Conduct innocent treatment or dispose poisonous food, and apply corresponding disinfection measures to the site. As regards bacterial food poisoning, solid food can be boiled for 15 to 30 minutes for sterilization, and liquid food can be disinfected with bleaching powder before discarded. Utensils can be boiled 15 to 30 minutes or disinfected with bleaching powder (the mixture of excreta and disinfectant in 1:2 and kept for 2 hours), while surrounding environment can be disinfected by the spraying of disinfectant peracetic acid. Chemical or toxic animals or plants that cause poisoning shall be buried deep.

 (3) Strengthening food safety supervision and management in disaster areas. Special attention should go to the cleaning and disinfection of food equipment, containers, and environment of flooded food production units that can only be reopened when proved qualified in the acceptance of local health administration department. Supervision of food and raw materials of these units shall be strengthened to prevent food contamination and use of moldy raw materials.

 (4) Conducting publicity and education on the prevention of food poisoning. Food that could not be eaten is the focus, including food soaked with water, dead livestock and aquatic products, water-soaked and decomposed vegetables and fruits, food from unknown origin or contained in non-dedicated containers or packages and without clear food labeling, as well as rice, wheat, corn, and peanut that mildew seriously (with the rate of more than 30%) and other rotten food and mushrooms that can not be identified as being toxic or edible.

4. Measures for strengthening environmental sanitation<0}

 (1) Sanitary requirement of habitation of victims of a natural calamity<0}

① First of all, temporary residences such as tents, sheds and makeshift houses shall be set up at safe and higher places to help victims settle down first before these residences are improved and perfected.<0}

②Temporary residences like sheds shall be able to shield wind and prevent rain, free from bricks, stones or other weights on the roof and meet requirements on ventilation and night illumination. In the south, room temperature shall be lowered to prevent heatstroke, while attention shall be paid to keep warm to prevent cold catching in the north. Cooking utensils shall be put at safe places and watched by persons to prevent fires.<0}

③ It would be best to arrange settlement for victims according to their original living conditions: maintaining original organizational system and numbering by household in order to achieve mutual understanding between cadres and the masses and among households and solve sanitation problems in an organized way. Attention shall be attached to sanitation of dwelling environment, forbidding self relieving anywhere or littering of garbage and sewage or raising livestock and poultry in sheds. <0}

④If possible, permanent residences shall be built further: health sector shall do well in preventative sanitary inspection, and planning, design and sanitation of newly-built residential areas shall be reviewed and constructed in accordance with Standard for Planning of Town and Village and Hygienic Standard for Rural Housing, residential location selection, function division, sanitation facilities and building construction shall not only meet resident’s demand on production and living but also conform to sanitary requirements on newly-built villages and housings.

 (2) Measures for toilet sanitation and feces disposal

① >Emergency temporary toilets of reasonable layout shall be set up at suitable places of victim rallying point according to local conditions and local materials, and the manure pit (ceramic jar or plastic bucket may be used) shall be of no seepage. If possible, commercial mobile toilets shall be used.

② Existing feces storing facilities shall be made the most of, if there is no storing facility, the feces shall be mixed with soil, sealed by mud and piled up, or covered by plastic film, with drainage ditch excavated all around to prevent rainwater soaking and washing.. In emergency cases, a round pit shall be excavated at a proper and slightly high location and waterproof plastic film is used lining of soil, extended by 20cm into the pit and compressed with soil, then the feces are dumped into the pit which is then covered and sealed for fermentation treatment. Containers like plastic buckets and wood casks of a larger volume may also be used for collecting feces, sent to appointed locations for temporary storage after they are filled and covered, and transported out for treatment after the flood. Feces may be transported away by motor vehicle if conditions permit.

 ③Feces of infectious patents treated intensively must be collected by special containers and disinfected. For treatment of feces of patents living scattered, their feces are fully mixed with bleaching powder at a ratio 5:1 and buried or mixed with same amount of lime powder and buried. Feces of residents on board shall be collected with containers, sent ashore for intensive disposal, forbidding dumping into water so as to prevent spread of diseases.

 (3) Garbage collection and disposal methods

①Garbage collecting stations shall be reasonably arranged according to actual situation of victim rallying point, and household garbage can be collected with brick tanks, metal cans (bins) or plastic bags, and responsible persons shall be appointed for cleaning and transporting so that garbage generated in one day is cleared that day.

 ②Garbage shall be transported out in time, composted at higher location and covered by plastic film. Drainage ditch shall be excavated all around, and medicaments shall be used for disinfecting and killing insects so as to control fly propagation.

③ Burning treatment can be used for some infectious garbage..

(4) Disposal of human and animal corpses: those of normal death shall be transported out in time for cremation treatment.The dead due to infectious diseases of category A and B shall be subject to sanitary disinfection well done and be transported out for cremation as soon as possible.Corpses of livestock, poultry and other animals found during environmental cleanup shall be buried after treatment with bleaching powder or quicklime.

(5) Environmental cleanup works after flood retreat: a mass patriotic sanitation campaign shall be launched and an extensive health education shall be performed, and villages and households in flooded area must be subject to thoroughly indoor and outdoor cleanup, disinfection, sterilization and deinsectization with the retreat of flood.<0}

①Organization of outdoor environmental cleanup: renovating roads, draining accumulated water, filling and leveling up pot holes, clearing garbage and sundries, eradicating weeds, dredging ditches and channels, hollowing out sludge from water wells, repairing toilets and other sanitary infrastructures, burying livestock and poultry corpses, performing environmental disinfection, eliminating epidemic disease hazards and restoring environmental sanitation as it was before the disaster in a short time.<0}

②For households in flooded area, their original houses shall be subject to safety inspection by specially appointed persons first after flood retreat to confirm their firmness. After that, residents shall open doors and windows, ventilate, clean furniture, clear indoor articles, repair toilets and pens of livestock and poultry, thoroughly clean indoor room and yard and clear away garbage and filth. If necessary, room walls and ground surface shall be disinfected. Articles for daily life brought back from temporary residence points shall be disinfected by boiling or isolation. Moving in for living shall be after the indoor room is ventilated and dried with fresh air.

(6) Disinfection: the flood will result in composite pollution by many kinds of microorganisms especially those leading to intestinal diseases, therefore, importance shall be specially attached to disinfection of foods, potable water and dwelling environment. Selected disinfection methods and disinfectants shall be simple and easy for use, with low price and adequate supply. Disease prevention and control sectors of all levels shall be of detailed division of labor for good organization of disinfection activities. First of all, there shall be specially appointed persons for protecting water sources, disinfecting portable water and performing environmental sanitation and disinfection.Flooded houses and public places shall be subject to sanitary disinfection according to their categories.There shall be specially appointed persons for centralized supply, preparation and distribution of disinfectants, propagandizing general knowledge of disinfection, organizing and guiding masses to perform disinfection correctly.

4. Infectious disease control

 (1) Preventive measures shall be strengthened to enhance environmental sanitation management, clear away garbage and filth, bury animal corpses, control feces and livestock and improve dwelling environment. Active measures shall be taken to protect water sources and dig wells to ensure clean portable water for disaster victims.

1. Infection sources shall be controlled and propagation ways shall be blocked up. In some areas of infectious epidemic diseases, infection sources shall be specially controlled, deratization activities shall be performed in natural epidemic focus, and bleeding places of mosquito and fly shall be eliminated from villages’ dykes and dams with densely populated disaster victims to effectively control and kill pests. Food sanitation management shall be enhanced to prevent food borne diseases.

 (3) Epidemic monitoring shall be enhanced and epidemic reporting network shall be established. Epidemic monitoring points shall be set up in key disaster areas or regions with more infectious diseases for sharp monitoring and timely reporting of epidemic trends, during this emergency period, special attention shall be paid to keep the sensitivity of epidemic monitoring system for this is the premise of perfect disaster relief and disease prevention.Information feedback, report and alarm shall be timely so as to make decisions on prevention.

 (4) Population immunity level shall be improved and planned immunity effectiveness shall be exerted. The flood destroys cold chain devices and data for planned immunization of disaster area, disturbs normal working procedures, which results in dispersed victim migration and difficult control of population immunity level.It is necessary to perform emergency vaccine inoculation and medicine prophylaxis for some diseases, and specific strengthened immunization and medicine-based prevention shall be carried out so as to control outbreak and spread of infectious diseases

(5) Health protection shall be strengthened for special populations to maintain victims in good health. Special populations such as the children, old, weak, sick, disabled and pregnant are of poor body immunity system and easy to be attacked by a disease resulted from internal and external pathogenesis due to excessive fatigue, overstrain, severe environment, malnutrition, disturbed living, exposure to sun and rain and shortage of rest day and night.Therefore, strengthened preventive health care shall be taken for these special populations so as to control spread of diseases.

(6) Epidemic monitoring shall be enhanced for transient populations so as to prevent cross infection and spread.

(7) A patriotic sanitation campaign shall be actively launched and sanitary conditions of temporary living quarters shall be improved, which is important for reducing disease occurrence.In addition, sanitation knowledge propaganda and education shall be carried out to help victims cultivate good sanitation habits, and drilling boiled water and washing hands before eating meals and after going to toilets shall be advocated.

6. Control of vectors

(1) Main measures for preventing mosquito

①Environmental remediation

②Preventing and dispelling mosquito: in areas with permissible conditions, residences may be installed with screen doors, windows or mosquito-curtains soaked with chemicals; mosquito-repellent incense may be burned before going to bed (electric incense may also be used); culicifuge bought from the market may be spread to naked body parts.

 ③Spraying chemicals inside (tents) and outside: DDVP, plifenate and so on.

 (2) Measures for preventing fly

①The environment shall be cleaned up for lessening propagation places.

②Chemicals can be sprayed inside (tents) and outside, moreover, fly catching paper and ribbon, fly trapping cage or swatter may be used.

 (3) Measures for killing rats: the following aspect shall be considered since the temporary residence during flood is a kind of special environment.

①In most cases, appliances such as rat cage and trap shall be used, but electric rat shall not be used, so shall self-made electrified wire netting. During this period, rat hole is shallow and it is easy to get water, so the hole can be grouted by water or slurry.

 ②Poison baits shall be used with caution: in case of very high rat density or severe danger to populations from rat borne diseases, poison baits may be used for killing rats on the basis of good organization and thorough propaganda.<0}

③Human and animal safety shall be guaranteed: poison baits shall not be made out of cooked foods and they must be of warning colors. Baits casting shall be done by trained rat killers and bait casting positions shall be with obvious marks. After bait casting, dead rats shall be searched in time, with livestock and poultry well controlled, foods preserved and children guarded. After end of bait casting, residual baits shall be collected, burned or deeply buried at proper location. Health sector shall prepare to provide first aid to the poisoned. It would be best to spray pesticide in residential area during deratization so as to avoid biting by worms and insects leaving from rat corpse.

7. Health education

Health education on people of the flooded area is an important guarantee for promoting implementation of measures for disaster relief and disease prevention. Health education must adapt to this emergency period, environment and object. Education contents shall not only be adapted to psychology, culture and quality of educated object but also be elaborately organized with the change of disaster situation, weather, disease, health services and victim’s hierarchy of needs of health education.Health education in flooded area shall be under unified leadership of disaster relief and disease prevention leading groups of all levels. Governments, related departments, village and resident groups shall earnestly participate to form a vertical linkage among groups of levels of province, city, county, township, village and resident and a lateral linkage among associations and societies related to health, news, publishing, education, culture, industry, commerce, enterprise, finance, bank, labor union, Women’s federation, communist youth league and the self-employed. During flood disaster, professional health education team shall be formed and full-time or part-time educators shall be arranged so as to guarantee actual implementation of health education and promote the accomplishment of disaster relief and disease prevention.

##  III. Drought

###  (I) Main public health problems

 1. Destruction of ecological environment

Forest fire, soil moisture shortage etc. result from drought will lead to destruction of forest cover, loss of water storage ability of vegetation, even result in extinction and migration of some plant and animal species. Drought may dry up some lake areas to low lands covered with weeds, which provides superior living environment for wild rodents. In case of rain storm even flood after long-time drought, the vicious cycle of massive soil erosion and landslides resulted from drought will occur and the destruction and deterioration of ecological environment will become more and more obvious.

 2. Water source pollution

When the drought disaster happens, the reduction of precipitation will lead to river cutoff, lake drying up and drinking water exhaustion. At the same time, the quality of residual water sources will deteriorate, and dissolved oxygen will reduce and the water will take on variation of color and smell. Due to reduction of water for living, drinking and production during the drought disaster, water source pollution becomes worse due to industrial waste water (including organic/inorganic waste water, waste water containing heavy metals and radioactive substances, cooling water suffered heat pollution), domestic sewage (including feces and washing water), agricultural waste water (containing pathogens, suspended substance, chemical fertilizer, pesticide etc.).

 3. Food pollution

 (1) Washing vegetable and fruit with polluted or unclean water due to lack of living and drinking water will lead to food pollution.

 (2) During high temperature and drought conditions, crop insect pests will increase, and the misuse of pesticides will lead to chemical pollution of vegetable and fruit.

 (3) During drought disaster, there is lack of wild water sources, especially in grazing area, the lack of drinking water and forage will lead to death of huge number of livestock and other animals. Food borne diseases will be resulted in if residents cook those dead animals as food.

 (4) Lack of food and drinking water during drought disaster will increase the possibility of intrusion for food by vectors such as rat and cockroach, which will accordingly increase the possibility of food pollution.

(5) Due to lack of production water, illegal food producers or marketers will use dirty water instead of clean water, will lead to food poisoning.

 4. Propagation of vectors

 (1) Propagation of flies: during drought disaster, lack of water provides unsanitary conditions for flies to propagate. Besides, in warm conditions, organic components of dead animals quickly decay and provide conditions for propagation of flies.

 (2) Propagation of mosquitoes: drought disaster will dry up some rivers and lakes, the residual pools will provide good environment for propagation of mosquitoes.

 (3) Increasing contact with other vampire arthropods: human will be invaded by chigger mites and gamasides when they sleep in wild area with more weeds and rich humus. In area of tsutsugamushi disease and epidemic hemorrhagic fever, human will face more threats.

(4) Growth of rodents hosting diseases: under weather conditions of drought, some lakes dry up to low lands covered with weeds, and these areas provide superior environment for wild rodents and result in their fast growth.

 5. Spread of infectious diseases

 During drought disaster, drinking water sources are concentrated, once these water sources were polluted, outbreak of severe infectious diseases would occur. At the same time, the change of living behaviors of vectors will lead to spread of infectious diseases. The propagation of flies and mosquitoes increase the possibility of spread of insect borne and intestinal infectious diseases. The rapid increase of rodents may cause spread of hemorrhagic fever among people.

###  (II) Main Emergency Measure for Sanitation

1. Supply of living necessity: Provide victims with living necessity, such as the mosquito curtain, the plastic bags and barrel, the mosquito repellent coil, the clean cistern and water treatment devices, the tools and the medicines against the rats, cockroaches and flies.

2. Ensure the quality of drinking water. Improve to protect for water intake points, purify and disinfect the drinking water. The organizations for disease control and prevention should increase the monitoring tests for the resources and quality of drinking water. Once any contamination in the drinking water is found, the relevant measure should be taken.

3. Food hygiene: Intensify the food clean measure, including repeat cleaning and disinfecting the vegetables and fruits before dining; caution and increasing the monitoring tests for food and beverages of unknown origin; forbidding from eating the dead waterfowls found within natural water areas, just like fish, shellfish, duck and goose.

4. Environmental hygiene: Sands and particles of dust worsen the air quality because of drought. So the dustproof facilities shall be set up on the doors and windows in the residential house, schools and kindergartens in order to prevent from dust pollution to living environment, food and drinking water, and increasing respiratory diseases.

5. Enhance disease surveillance and epidemic reports to control the epidemic situation. In case of the eruption of a major epidemic, the relevant authorities shall take the measure of precaution and control positively.

6. Apply to prevent and cure the heat illness: Most of droughts happen in the high temperature season in which the heat illness often appears. Under such conditions, the health service institutions of disaster areas shall take the health care measures to prevent from heat illness. The patients with heat illness shall be given first aid and transferred to the medical organizations to avoid any death accident.

7. Health education: arrange, edit, print and distribute information materials about health care; organize the leaders, the medical staff, the teachers and the other relevant persons to take part in the activities of guiding the crowd on health care; hold the various kinds of health care education activities through mass media, such as radio, TV, broadcast, internet, newspapers and magazines. The resource of water and food is so easy to be contaminated during the drought that the infection explodes and food poisoning arises. Thus the main purpose and point of the health education is to reduce the harms to the crowd’s health by changing the living environment, guide the crowd to keep healthy habit and prevent from illness.

## IV. Typhoon

### (I) Main Problems of Public Health

1. Strong and rapid typhoon sweeps a large number of areas so that people get hurt in various ways, such as smashing, pressing, tumbling and drowning. In that case, the medical rescue is needed in emergency. For details like flood and earthquake, it needs danger removal, life rescue, wash, disinfection and blast resistant simultaneously.

2. The disaster caused by windstorm is often with the company of flood. This kind of disaster damages living, producing and ecological environment seriously, such as flood disaster and earthquake.

### (II) Main Emergency Measure for Sanitation

1. The measures of health rescue during the disaster caused by windstorm is to renew the water supply, disinfect the drinking water, ensure the safe food, enhance the health supervision of drinking water and food and eliminate the food born disease and intestinal infectious diseases.

2. Clean up and bury the corpses of human and animals in time, keep healthy environment, set up the sanitary toilets and enhance the management of excrement and garbage.

3. Improve the works about monitoring and reporting disease, organize the medical tours of the medical staff and spread the health education.

# Part IV Key Points on Health and Disease Prevention Knowledge under Special Conditions

## I. Heat Illness in the High Temperature Season

In the hot summers, the high temperature, the intense humidity and the strong radiation result in the changes of physiological functions in temperature regulation, water-electrolyte metabolism, circulatory system, digestive system, nervous system and urinary system. Once the body cannot adapt, the symptoms of heat illness will arise, such as the unconventionally high temperature and the turbulence of physiological functions.

###  (I) Symptoms of Heat Illness

Heat illness is a kind of Acute disease in central nervous system and/o cardiovascular system which results from the turbulence of heat balance and/or water-electrolyte metabolism. Furthermore, it is easily caused by high temperature, intense humidity, windless situation, bodily weakness, unfit heat, high labor intensity and over fatigue.

The normal symptoms of heat illness are dizziness, chest tightness, heart palpitations, flushed face, heat skin and hyperthermia. On the other hand, the critical symptoms are profusely sweating, lower blood pressure, swoon, muscle cramps, and even unconsciousness, sleepy, coma and so on.

###  (II) Treatment to Heat Illness

If patients can receive the timely treatment they may recover soon. The patients shall be removed from a high temperature environment to a cool and well-ventilated place, given rest with salty soft drink, and even given intravenous infusion of glucose normal saline to correct the water-electrolyte balance.

###  (III) Precaution of Heat Illness

1. Drink water generously. Increase your intake of fluids no matter strength of sport in the high temperature season, avoiding drinking after feeling thirst. The patients limited in fluids intake shall follow the directions that their doctors give them.

2. Add salt and mineral. It is unfit to drink the alcoholic beverage and sugar-sweetened beverage in high temperature season because they will cause the loss of body fluids. At the same time, people shall not drink the iced beverage, avoiding stomach cramping.

3. Restrain from having fatty food to reduce caloric intake.

4. Put on the light, loose and light-colored clothes.

5. Keep indoor activities. Turn on the air conditioner if possible. If without air conditioner, may escape the heat in the public place such as shopping center, library and so on. Although using electric fans can reduce the heat feeling temporarily it is not helpful to prevent heat illness under the high temperature above Celsius 32.2 (Fahrenheit 90). But shower with cold water and turning on the air conditioner will be more effective to reduce the body temperature.

6. Use the UVA/UVB sun protection cream with SPF15 and above, wear the hat and sunglasses, or a sunshade while outdoor.

7. Choose a cool place while outdoor, avoiding midday.

8. Reduce the outdoor exercises in the high temperature. Drink 2 to 4 cups of cold non-alcoholic beverage each hour if the outdoor exercises are necessary. Besides, the sport beverages may be helpful to complement the salt and mineral lost by sweating.

9. Do not leave the kids and pets in the car while leaving from the parking place, if driving in the high temperature.

10. Everyone could have heat illness but should pay more attention to the high risk group, such as the babies, the elder people above 65, the mental patients, the chronic patients with heart disease or hypertension and so on. The symptoms of heat illness shall be found timely to the high risk group.

##  II. Low Temperature Frozen Disaster

###  (I) Frostbite

Harms from ice snow (frozen rain) are caused by freezing weather, including frostbite, frozen stiff, coma and die of frost. The best precaution is to provide with the warm clothing and the facilities to keep out the cold, as well as the skills of curing frostbite.

1. Position of frostbite: nose, ears, face, chin, fingers and toes.

2. Symptoms of frostbite

(1) Pain on the flushed skin.

(2) Whiten skin or sallow skin.

(3) Skin sclerosis or waxen.

(4) Numbness.

3. Treatment to Frostbite

(1) If you found someone in frostbite help the patient go to the hospital immediately. At the same time, you should confirm if the patient has the symptoms of hypothermia. If any, take the first aid measure.

(2) If the patient of frostbite is unable to receive the medical treatment temporarily, the following measures should be taken:

① Remove the patient to a warm room as soon as possible; for avoiding the low temperature surrounding, take off the wet and cold clothes, footgear and glove and put on the dry clothes and footgear.

 ② Do not walk with the frostbitten feet and toes to avoid more serious harms.

 ③ Dip the frostbitten part of the body in the warm water but not the hot water. The temperature of water should be comfortable.

 ④ Use the body temperature warm the frostbitten part. For example, armpits could warm fingers.

 ⑤ Do not knead or massage the frostbitten part with snow or the other materials, or more serious injuries will happen.

 ⑥ Do not roast the frostbitten parts with the electric blanket, electric light or fireplace, burner or radiator. That’s because the frostbitten parts are numb and easy to be burned.

4. Prevention of Frostbite

 (1) Bring enough clothes to keep out the cold and wear the hat, scarf and gloves as well as bring the umbrella while outdoor.

 (2) Keep the clothes dry and sleeping in warm surroundings.

(3) Have more high-calorie food to keep out the cold; take more hot drink to keep the body temperature.

(4) Frequently observe the skin whether it becomes waxen, stark or numb; Often rub the face and stretch the limbs.

 (5) Stay at the sunny place and do not wear the tight clothes to avoid blocking the blood circulation.

 (6) Do not touch the metal surface whose temperature is very low in the winter so that the fast heat conduction causes frostbite.

 (7) Enhance the warm protection to the knee joint, the elbow joint, the wrist and anklebone.

 (8) Pay attention to the feet warming of the elderly because they are unable to keep warm effectively. They shall often walk, stretch the legs and rub the hands together to improve the blood circulation and avoid long sitting.

###  (II) Hypothermia

Exposing in the low temperature environment, the body loses the heat more rapidly than the heat producing itself, which result in hypothermia or anomalous hypothermia. The brain will be unable to reflect clearly and work normally.

1. The high risk group of hypothermia

Including: the elderly without enough food, clothes and facilities for keeping warm; babies sleeping in the cold room; unattended kids; alcoholic adults; mental patients; the persons living outdoor, such as the homeless, travelers and outdoor staff.

2. Symptoms of hypothermia

 (1) The symptoms of adults include: Ague, fatigue, faintness, sluggish feeling, unconsciousness, blurring and sleepy;

 (2) The symptoms of babies include: The cold skin with cardinal red and the reduced body movement;

3. Precaution of hypothermia

 (1) The best measure is to escape from the cold weather. For example, prepare the house and cars for cold protection; take the safe cold-proof measure in the extreme cold weather.

 (2) Avoid soaking in the rain, sweat and cold water.

4. Treatment for hypothermia

(1) Go to the hospital immediately if any symptom of hypothermia is found.

(2) If the patient is unable to receive the medical treatment, the following steps should be taken to rise the body temperature.

① Remove the patient to a warm room or shelter; take off all the wet clothes.

② The patient should put on the dry clothing (blanket, clothes, towel or bed sheet) and rise the temperature of body center (chest, neck, head and groin) by the electric blanket and the body contact.

③ If the patient is clear-headed he or she may have some hot non-alcoholic drinks; after recovering of body temperature, the patient should be wrapped in the warm blanket, including his/her head and neck, and go to the hospital as soon as possible.

###  (III) Carbon Monoxide Poisoning

Carbon monoxide is a kind of colorless, odorless, non-irritating asphyxiating gas, which can be produced by incomplete combustion of the fuel in domestic coal stove or gas furnace. Inhaling small quantities of carbon monoxide over a long period of time or inhaling relatively large quantities at one time will cause dizziness, headache, nausea, vomiting, lips turning cherry-red, rapid heart rate, dysphoria, etc.; severe sufferers will be with coma, myosis, muscular tension increased, frequent convulsions, etc.; severe sufferers will die soon because of respiratory depression if not treated timely. Common causes of gas poisoning are chimney blockage, down draft of chimney, loose chimney connection, gas pipeline leakage, gas valve not closed, using brazier for warming, vehicle exhaust, etc.

1. Prevention

Vehicles trapped on road should be adequately ventilated to avoid passenger poisoning. The following points are to be remembered by residents in disaster area:

(1) Before using water heater or gas stove, make sure there is no smell of gas leaking; water heater should never be installed in a confined bathroom or poorly ventilated places;

(2) Pay attention to the proper use and maintenance of water heater or gas, and check whether the gas is fully burned or not. If the flame is red, then the combustion is incomplete, which means the quantity of carbon monoxide is relatively large; if the flame is blue, then the combustion is complete, which means the quantity of carbon monoxide is relatively small;

(3) Pay attention to the check of the hose connected with a gas stove, and make sure there is no ageing, cracking or insect bite;

(4) For gas with autoignition, if not ignited for several times, wait a while so that the gas discharged can be diffused before the next ignition;

(5) Coal stove installed indoor should be equipped with chimney with completely closed flue, and when warming with brazier, pay attention to the air circulation.

2 . Disposal after poisoning

When domestic gas leakage happens, turn off the gas valve quickly, open the doors and windows for ventilation, and be sure not to use open flame; in the event of gas poisoning, the patient should be promptly transferred to places with fresh air and kept warm; for serious sufferers, call “120” quickly to send them to hospital for treatment.

###  (IV) Cardiovascular and Cerebrovascular Diseases

Exposure to low temperatures will result in sympathetic excitation and systemic capillary contraction, which make heart and brain workload increased causing high blood pressure, and brain ischemia and hypoxia accelerate the formation of blood clots; and because of the dry climate and body consumption of water, hydropenia is more likely to happen, which causes blood viscosity increasing and blood flow slowing down. So the incidence of acute myocardial infarction and stroke, especially cardiovascular disease of the elderly, is relatively higher in cold weather.

1. Prevention

(1) In the autumn and winter with capricious climate, the elderly suffering from cardiovascular and cerebrovascular diseases must keep themselves warm; and in the extremely cold weather such as snowing and snow melting, they should minimize the time out;

(2) Try to avoid catching chill and other infections and avoid catching cold, and beware of the cold-induced diseases;

(3) When going out in cold weather, pay attention tithe cold-resistance to maintain warmth, put on a hat, scarf and gloves and take along with related emergency medicines;

(4) Travelers should maintain a balanced state of mind, and regulate negative emotions to avoid the stress and emotional agitation;

(5) Do some appropriate sports, and make arrangements for the exercise time and amount of exercise.

2. Disposal

After the onset of cardiovascular and cerebrovascular diseases, put the patient in an appropriate position and make him lie on his back, unbutton his collar to make him breathe smoothly, and keep him warm; and call “120” immediately to send him to hospital as soon as possible.

##  III. High Altitude

###  (I) Requirements to the personnel in high altitude

Aged 18 to 40, health without the history of altitude diseases or the following diseases:

1. All kinds of structural heart diseases or high heart rate;

2. Chronic pulmonary function failure;

3. Falling sickness and serious neurasthenic;

4. Serious non-gastrointestinal disease;

5. The functional failure of liver and kidney

6. Upper respire tract infection

7. Serious disease of endocrine system, such as diabetes and thyroid diseases.

###  (II) Prepare commodities and first aid medicines before entering the high altitude area.

1. First aid Kit: ethanol, woundplast, gauze, bandage, tampon and so on;

2. Commonly used medicine: Painkillers, boldines, anti-diarrhea medicine, broad-spectrum antibiotics, cold medicine, antihypertensive drugs and so on;

3. The medicine to increase the oxygen content, such as heart tonic pills, vitamins, Rhodiola Rosea Extracts and so on;

4. Portable oxygen supply device;

5. Anti-frostbite: cold protective clothing, shoes, hat and gloves, as well as frostbite cream;

6. Anti-ultraviolet: sunglasses, topee and sun protection cream;

7. Packaged food, drinking water and so on;

8. Communication equipment.

###  (III) Precautions on plateau

 1. Work together with persons with plateau experience. Avoid act alone;

 2. Carry out psychological training, plateau knowledge and sense training. Provide psychological preparation to enter plateau;

 3. Avoid long time strenuous activities. Health limits for plateau activities:

 (1) Work lasting for less than 6 hours in 3000 to 4000m altitude;

 (2) Work lasting for less than 4 hours above 4000m;

 (3) The work cycle shall not exceed 6 months above 4000m. Rest for 2-3 months in low-altitude area after working for more than 1 year. Pay attention to have a good rest. Avoid excessive stress and fatigue;

 4. Take center oxygen-supply if possible;

 5. Drink sufficient water. Supplement nutrition. No smoking or drinking;

 6. Keep warm. Prevent colds and nosebleeds;

 7. Self-recognize autonomic plateau response. Stop work immediately should any subjective symptom is found. Supply oxygen and have a rest. Acute altitude sickness include: headache, dizziness, nausea, vomiting, palpitation, chest distress, shortness of breath, loss of appetite, vertigo, nose bleeding, numbness in limbs, tetany, joint pain etc.

###  (IV) Precautions after returning to plains

 A "de-adaptation" response ("drunk oxygen") will appear after returning from high to low altitude, from hypoxia to oxygen saturation, appearing tired, fatigue, drowsiness, hest distress, dizziness, loss of appetite, diarrhea and other symptoms. Pay attention to the following:

 1. Live regularly. Ensure adequate sleep, exercise, and regular participation in outdoor activities. Increase ventilation. Take a deep breath. Avoid staying up late or strenuous exercise etc;

 2. Have plenty of fresh fruits and vegetables. Avoid overeating;

 3. If the "de-adaptation" response does not be relieved after several days, go to see the doctor.