



中国疾病预防控制中心

救灾防病应急工作

Disaster Relief and Disease Prevention
Chinese Center For Disease Prevention and Control

汶川大地震救灾防病

Disaster Relief and Disease Prevention work in Wenchuan Earthquake

- 2008年汶川大地震，国家及各省CDC派出了疾控人员3910人，644台车辆参与救灾防病；

In Wenchuan Earthquake, Chinese National CDC and provincial CDC totally dispatched 3910 public health workers and 644 vehicles to the disaster area;

- 其中国家CDC派往14个重灾县灾区人员19批610人次，直接投入经费946万元。

Chinese National CDC dispatched 610 workers (19 teams) to 14 most serious counties, which cost 9.46 million RMB directly;

- 为科学救灾防病决策提供技术支撑。

Support for the policy making in disaster relief and disease prevention work.



- 恢复灾区传染病和卫生实验室检测

Recovering the infectious disease and public health laboratory



- 开发手机应急疫情报告系统

Developing the mobile phone disease reporting system



- **实施现场消杀灭、传染病控制和卫生学评价**

Disinfection, disinfestation and deratization , infectious disease control and health assessment



- 开展救灾防病健康教育宣传

Health education and propagandizing on disease prevention



- 迅速开展灾区儿童免疫接种
Rapidly start the EPI among children in disaster area

- 2010年4月14日：青海玉树发生地震
- 中国疾控中心先后派出109人次奔赴灾区
- 开展救灾防病工作和鼠疫防控工作

- Apr. 14th, 2010: Qinghai Yushu Earthquake
- China CDC dispatched 109 person*times
- Disaster relief and disease prevention
 - especially for the plague





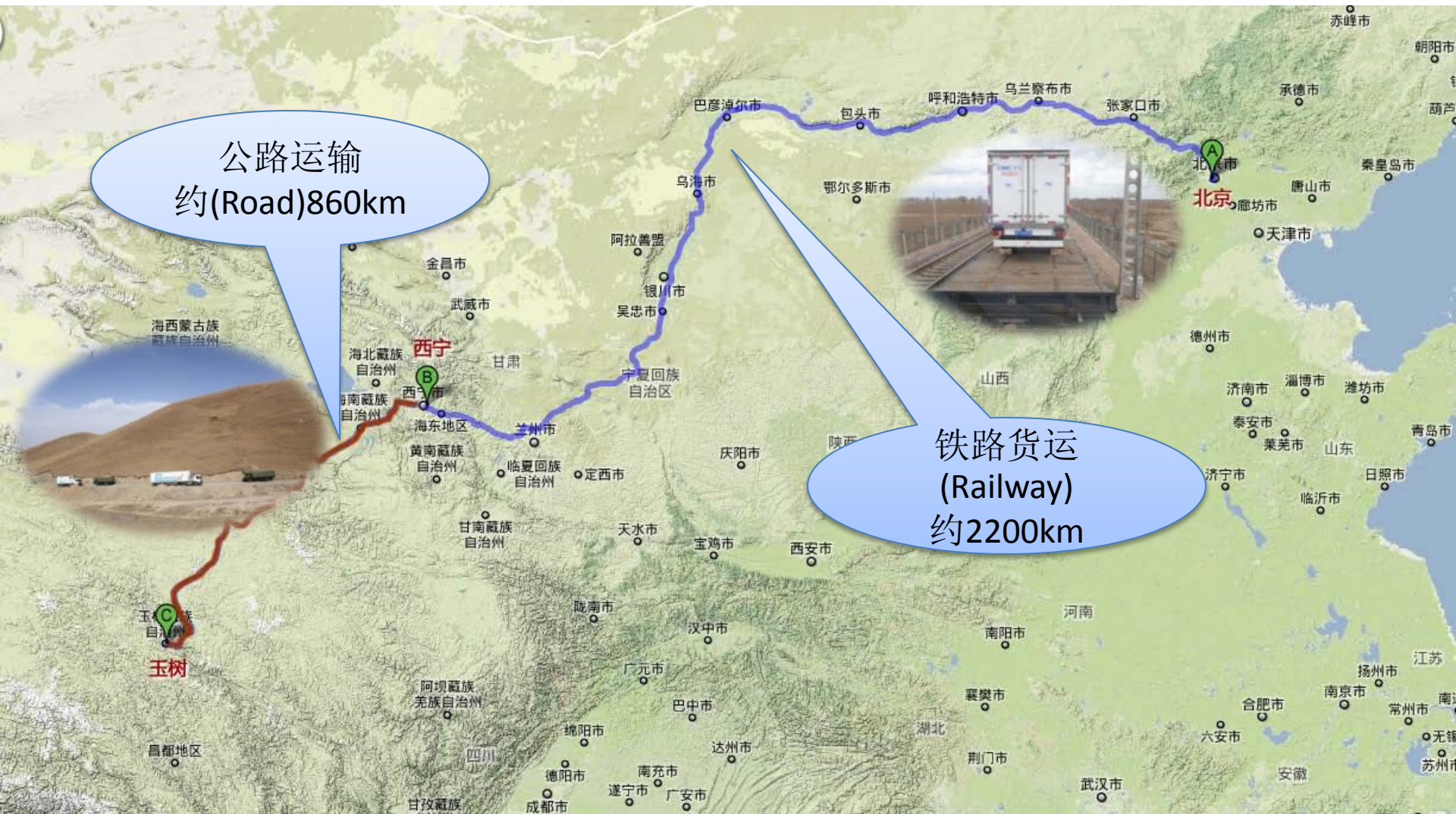
紧急飞往玉树灾区
Emergency flied to Yushu



5月2日，移动生物安全实验室经过长途跋涉，顺利到达青海省玉树县并通过安置调试，正式运行启用。

- May 2th, Mobile Biosafety Laboratory arrived Yushu county through a long arduous travel;
- Mobile Biosafety Laboratory started work soon after rapid installation and debugging.









经过反复调试，5月2日，移动生物安全实验室正式启动
当晚，连夜对禅古村7只死亡家犬样本进行鼠疫病原检测
After repeatedly debugging, the Mobile Biosafety Laboratory
started work in May 2th and finished the testing of 7 self-died
domestic dogs from Changu village for Yersinia pestis in the
same day.



收集到了国内外第一份移动生物安全实验室在
3500米以上高原运转的数据，开创在高海拔地区
使用该类实验室的先河

This was the first time among earth to use Mobile
Biosafety Laboratory in plateau above 3500 meters high
and collect the data from Mobile Biosafety Laboratory
running in plateau.

ScienceNOW

From Science's
Online Daily News Site

Chimps Grieve Over Dead Relatives
New studies of chimpanzees conclude that our closest evolutionary cousins share many humanlike responses to death, including mourning. The work is some of the first evidence of grieving in animals other than humans, and it suggests that chimps may be more emotionally affected by death than many researchers realized. <http://bit.ly/chimprief>

Dark Matter Halos Look a Bit Like a Football

Dark matter is distributed throughout the universe in giant, football-shaped clumps, according to new, indirect images of the mysterious substance that holds galaxies and galaxy clusters together. The work provides more evidence that dark matter, even on the largest scale, strongly affects the visible cosmos with its gravity, although it remains remarkably unaffected in return. <http://bit.ly/darkmatter-footballis>

Elephants Have an Alarm Call for Bees
East Africa's elephants face few threats in their savanna home, aside from humans and lions. But the behemoths are terrified of African bees, and with good reason. An angry swarm can sting elephants around their eyes and inside their trunks and pierce the skin of young calves. Now, a new study shows that the pachyderms utter a distinctive rumble in response to the sound of bees, the first time an alarm call has been identified in elephants. <http://bit.ly/elephantalarm>

Did Monster Eruptions Warm the World?
Talk about global warming. About 55 million years ago, the planet's temperature jumped by as much as 5°C and remained that way for about 170,000 years. Thousands of primitive marine species vanished. But the event also coincided with an unsurpassed era of plant diversity as well as the rise of mammals. Now, researchers think they've figured out what caused the hot-house: A series of massive undersea eruptions may have saturated the air with perhaps trillions of tons of methane—a much more potent greenhouse gas than carbon dioxide. <http://bit.ly/monstereruptions>

Read the full postings, comments, and more at news.sciencemag.org/sciencenow.



Once bitten, twice shy. With care, researchers attempt to catch fleas at a marmot burrow in Qinghai.

CHINA

Race to Contain Plague in Quake Zone

BEIJING—Disease specialists have launched an emergency operation in western China to avert a possible outbreak of pneumonic plague in the wake of a magnitude-6.9 earthquake in Qinghai Province.

The 13 April quake, centered in Yushu County in southeastern Qinghai, killed 2,220 people and left about 100,000 homeless. As relief crews race to shelter survivors and cremate victims, the Chinese Center for Disease Control and Prevention (CDC) this week dispatched to Qinghai a mobile biosafety level 3 (BSL-3) laboratory, capable of safely handling the most dangerous pathogens. The agency acquired the lab after the SARS epidemic in 2003; this is the first time it has been deployed. "We'll do whatever it takes to prevent an outbreak," says Xu Jianguo, director of CDC's National Institute for Communicable Disease Control and Prevention (NICDC) in Beijing.

Plague is endemic in 10 Chinese provinces; in Qinghai, it is spread by marmots, a burrowing rodent. In a typical year, western China reports a handful of plague cases, and most victims are marmot hunters. People bitten by fleas carrying *Yersinia pestis* can develop bubonic plague—the medieval Black Death—whereas those who inhale the bacterium can contract the pneumonic form. Both forms of the disease can be cured if antibiotics are given early, but pneumonic plague poses a greater threat because it spreads from person to person. The Yushu earthquake has created favorable conditions for pneumonic plague, says Nils Christian Stenseth, an ecologist at the University of Oslo who studies plague in China and Central Asia. He sees the potential for "a rather serious outbreak."

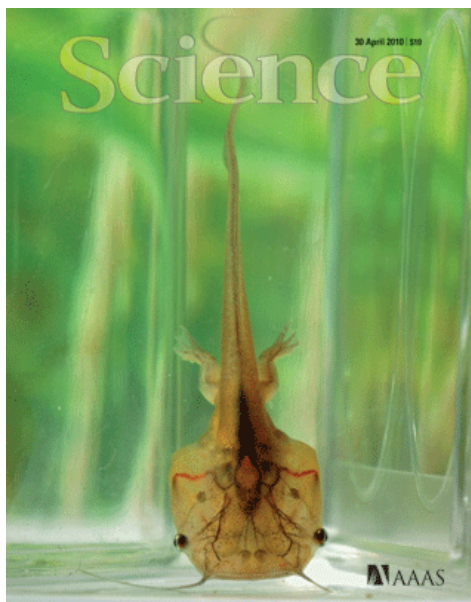
Like clockwork at about the end of April, marmots awaken from hibernation on the Qinghai-Tibetan Plateau. One scenario that Stenseth and others fear is that fleas will

jump from infected marmots to rats and then to stray dogs and cats. An outbreak could spread quickly among survivors huddled in shelters.

A few dozen researchers from NICDC and the Qinghai Institute for Endemic Diseases Prevention and Control in Xining, Qinghai's capital, have fanned out in the quake-affected area. It hasn't been easy for plague watchers: Last week, one NICDC scientist came down with altitude sickness and had to return to Beijing. In Yushu, the quake damaged a plague-monitoring station; its staff remain unaccounted for as *Science* went to press.

Only about 40 plague cases have been reported in Yushu County in the past half-century, says NICDC senior plague specialist Yu Dongcheng. Of particular concern, he says, is the virulence of Qinghai's *Y. pestis* strain. "Inhaling even a single cell can cause disease," asserts Yu. In comparison, he says, it typically requires a few hundred cells of strains in neighboring Yunnan Province to cause disease. Thanks to the mobile BSL-3 lab—one trailer with a positive-air-pressure lab chamber, and a second carrying the generator and water—"we'll be able to do experiments that we can't normally do in the field," says Xu, such as isolating *Y. pestis* and running polymerase chain reaction tests.

Prevention is a tall order. Marmot hunting has been banned, but pelts are valuable: Fur coats fetch more than \$1000. Increasing the temptation, marmots ill with plague are easy to catch, says Yu. To limit marmot-human contact, researchers will cordon off plague-infested marmot burrows. It will be impossible to maintain a vigil on all marmots and animals they might come into contact with. "But if there are any human cases, we'll know," Yu says. Only in September, when marmots hibernate for the winter, can researchers let down their guard. —RICHARD STONE



COVER COURTESY OF CHINESE CDC

鼠疫实验室检测基地

Panorama View of plague testing laboratory base





移动实验室 Mobile Biosafety Laboratory



移动实验室
Mobile Biosafety Laboratory



内部操作间
Inner Operation Room



实验操作
Testing



传递样本
Delivering sample



即时检测 Real-time testing

鼠疫检测实验室建立后，我们可即时检测，为控制疫情赢得宝贵的时间

Plague testing laboratory made real-time testing to be possible and enable us act as early as possible



截止10月1日，基地已完成了包括家犬、旱獭、羊、高原鼠兔和小家鼠等42只自毙动物的检测，约97份样本

By Oct. 1st, the laboratory had tested 97 samples from 42 self-died animals, including domestic dogs, marmot, goat, Ochotona Alpina Pallas and Musmusculus.



即时检测Real-time testing

鼠疫检测实验室建立后，我们可即时检测，为控制疫情赢得宝贵的时间
Plague testing laboratory made real-time testing to be possible and enable us act as early as possible





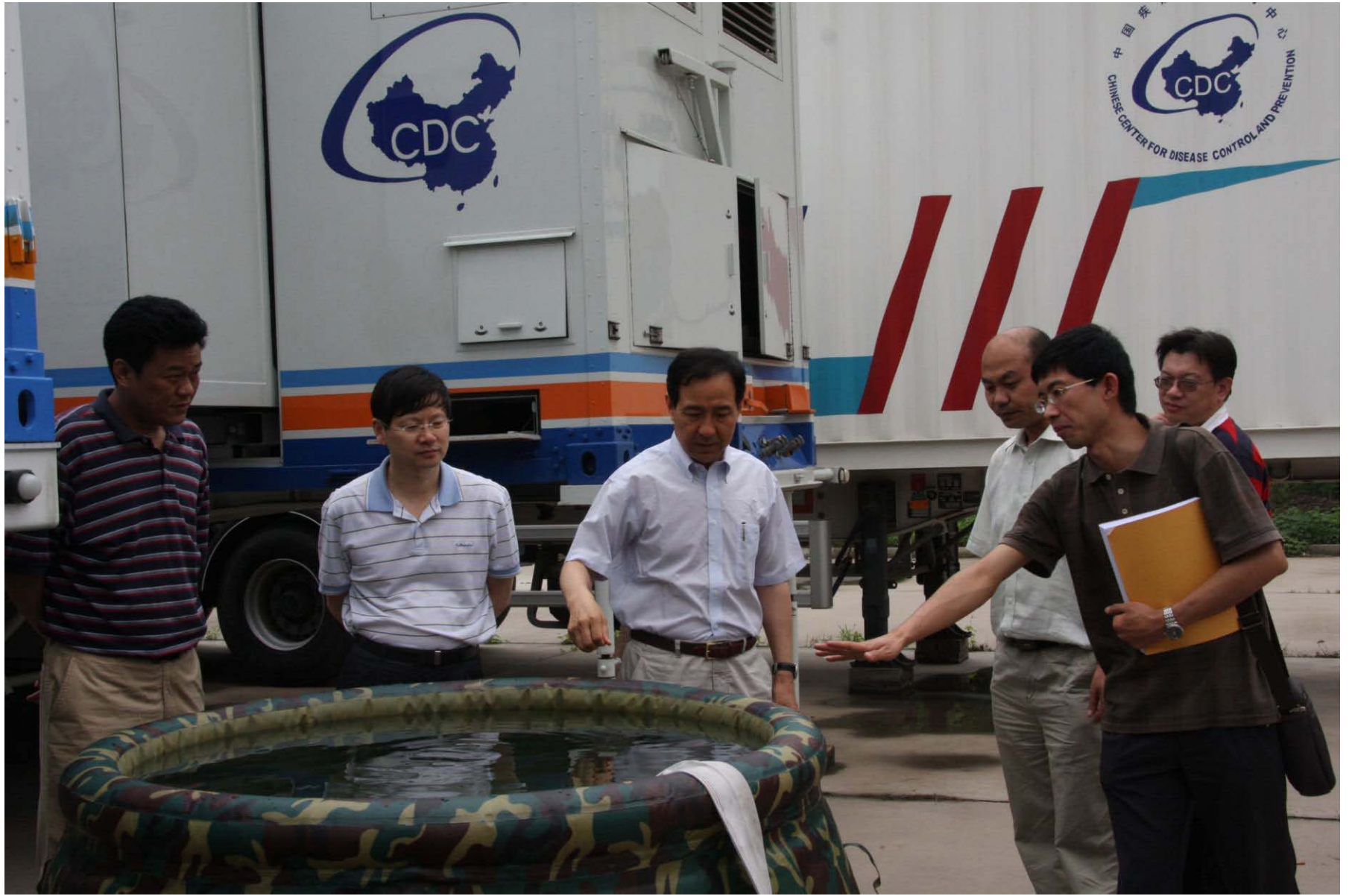
应急保障方舱Emergency Support Shelter



应急通讯指挥方舱
Emergency Communication and Command Shelter



应急生活保障方舱
Emergency Living Support Shelter



舟曲特大山洪泥石流

Extraordinarily serious Mountain torrents & Debris flow in Zhouqu

- 8月8日0时舟曲县突降暴雨
0 AM, Aug. 8th, 2010: Rainstorm happened in Zhouqu
- 引发特大山洪泥石流
Caused extraordinarily serious Mountain torrents & Debris flow
- 舟曲县城关镇、江盘乡4.7万人受灾
47 thousand people suffered in Zhouqu county area and Jiangpan town
- 大量房屋倒塌
Lot of buildings collapsed
- 死亡1465、失踪300人
1465 died, 300 missing
- 紧急转移安置2万人
20 thousand people relocated urgently
- 堰塞湖抬高白龙江水位10米
The barrier lake elevated the water level of Bailong river for 10 meters
- 全城停水停电
Lost water and electric power supply

紧急救援

Emergency Rescue

- 中国疾控中心4批15人,首批8月9日8时抵达舟曲
China CDC totally dispatched 15 public health workers (4 teams), the first team arrived Zhouqu at 8 AM. Aug, 8th.
- 四川、陕西、深圳3批共50人
50 CDC staff from sichuan province, shanxi province and shenzhen city
- 甘肃省内1500人
1500 from Gansu province



七道梁

分水岭

500KM

穆寨岭

铁尺梁

永登县

白银市

皋兰县

兰州市

永靖县

临夏回族自治州

积石山保安族东乡族撒拉族自治县
临夏市

东乡族自治县

广河县

临夏县

夏河县

合作市

临潭县

碌曲县

甘南藏族自治州

玛曲县

榆中县

定西县

定西市

通渭县

临洮县

渭源县

漳县

岷县

卓尼县

迭部县

舟曲县

会宁县

静宁县

定西地区

陇西县

漳县

武山县

礼县

宕昌县

西和县

成县

陇南地区

武都县

康县

文县

平凉

崇信

华亭县

庄浪县

通渭县

秦安县

张家川回族自治县

清水县

天水市

两当县

西和县

成县

武都县

康县

文县











舟曲县CDC
Zhouqu county CDC





放射科

舟曲县疾控中心受损严重
Zhouqu county CDC suffered much

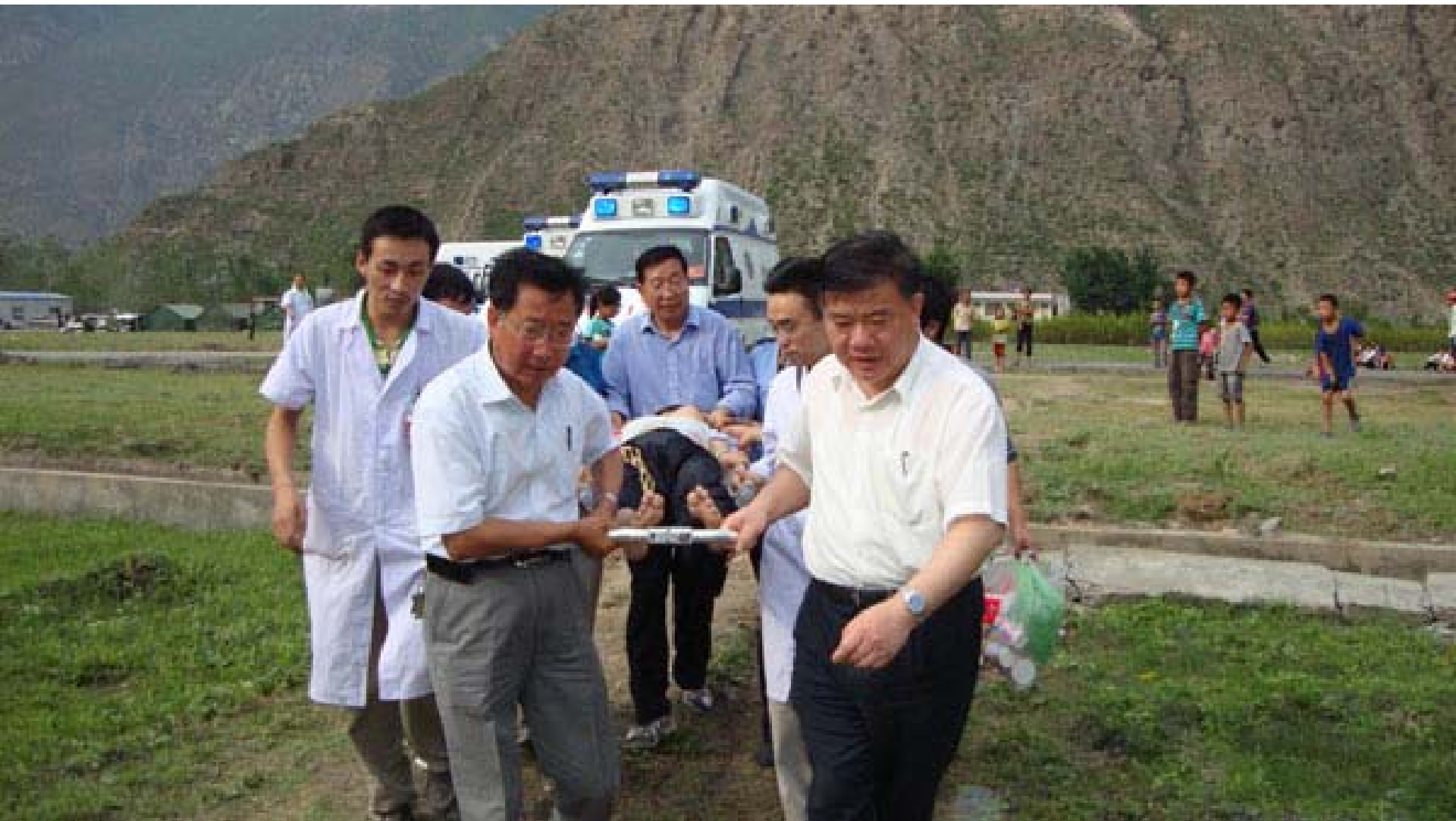


卫生部部长亲临现场指挥卫生应急工作
The Minister of Health went to the site
and commanded health emergency work



卫生部部长现场组织伤员转运

The Minister of Health organized the transportation of wounded on the site



卫生部部长亲自参与转运伤员

The Minister of Health participated the transportation of wounded in person

保障饮水卫生和安全

Ensure the drinking water safe and sanitary



蓄水池 Po

集中供水
Centralized water supply



菜、洗衣、洗头、随手、自觉排队

灾区临时应急供水点
须知
请节约用水，
请自觉排队，
保护饮水设施，
保障应急供水。
舟曲县水务水电局

保护临时供水管路
Protected the temporary
water supply pipe

水处理设备
water treatment equipment



13.08.2010 16:04

水质快速检测
water quality rapid testing



13.08.2010 16:04

供水点
water supply point



西明供水点
每田吊车出
24/0808
257

西明供水点
XIMING SHUIJIAN
2008.08.08

告示
XIMING SHUIJIAN
2008.08.08

垃圾消毒
Garbage disinfection





环境消毒
Environmental
disinfection



志愿者沿街拾捡垃圾
Volunteer picked up the
garbage along street



垃圾集中堆放
Garbage centralized storage



积水取样
Water sampling

积水取样
Water sampling



临时厕所
Temporary toilet



防疫人员现场踏查
Public health worker
field survey



13.08.2010 10:50

恢复计划免疫工作

Recover the EPI

查看接种场所
Inspected vaccination location



Vaccination room
for Hepatitis A

甲肝疫苗接种
留观室

甲肝疫苗接种点
←

请
走
止

灭火器

借助无线上网笔记本电脑
恢复传染病信息报告系统

Restarted the disease information reporting
system with 3G wireless laptop

了解医疗点接诊情况
Collecting information
on temporary clinic





无线上网设备
Wireless net
equipment

发货地址：

汶川抗震救灾管理培训



抗震救灾先进基层党组织
先进集体



无线上网使用培训
Training on
wireless using

健康教育和大众宣传

Health education and public propagandizing

发展



14.08.2010 11:55



砂石堆放区

搅拌机

卫生知识宣传海报

关于... 卫生知识...

三不一要

勤洗手

不随地吐痰

不随地大小便

要戴口罩

临舍

钢筋区





迅速重建实验室并恢复检测

**Re-established the laboratory
and restart testing Rapidly**









重慶鳳凰檢驗科設備

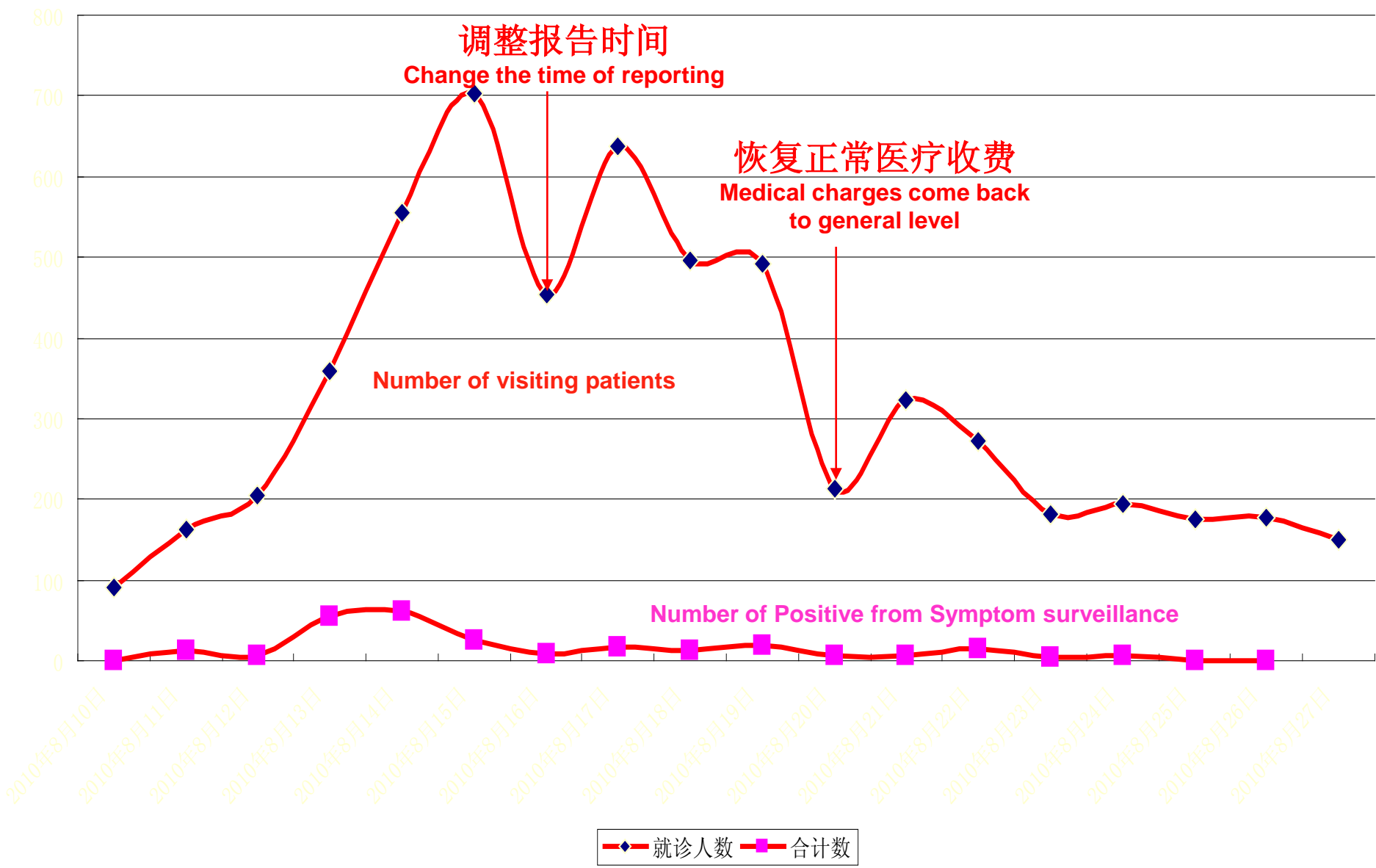
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重慶鳳凰檢驗科設備

重慶鳳凰檢驗科設備

卫生部领导考察板房实验室
The ministry of health leader
inspected the prefab Lab



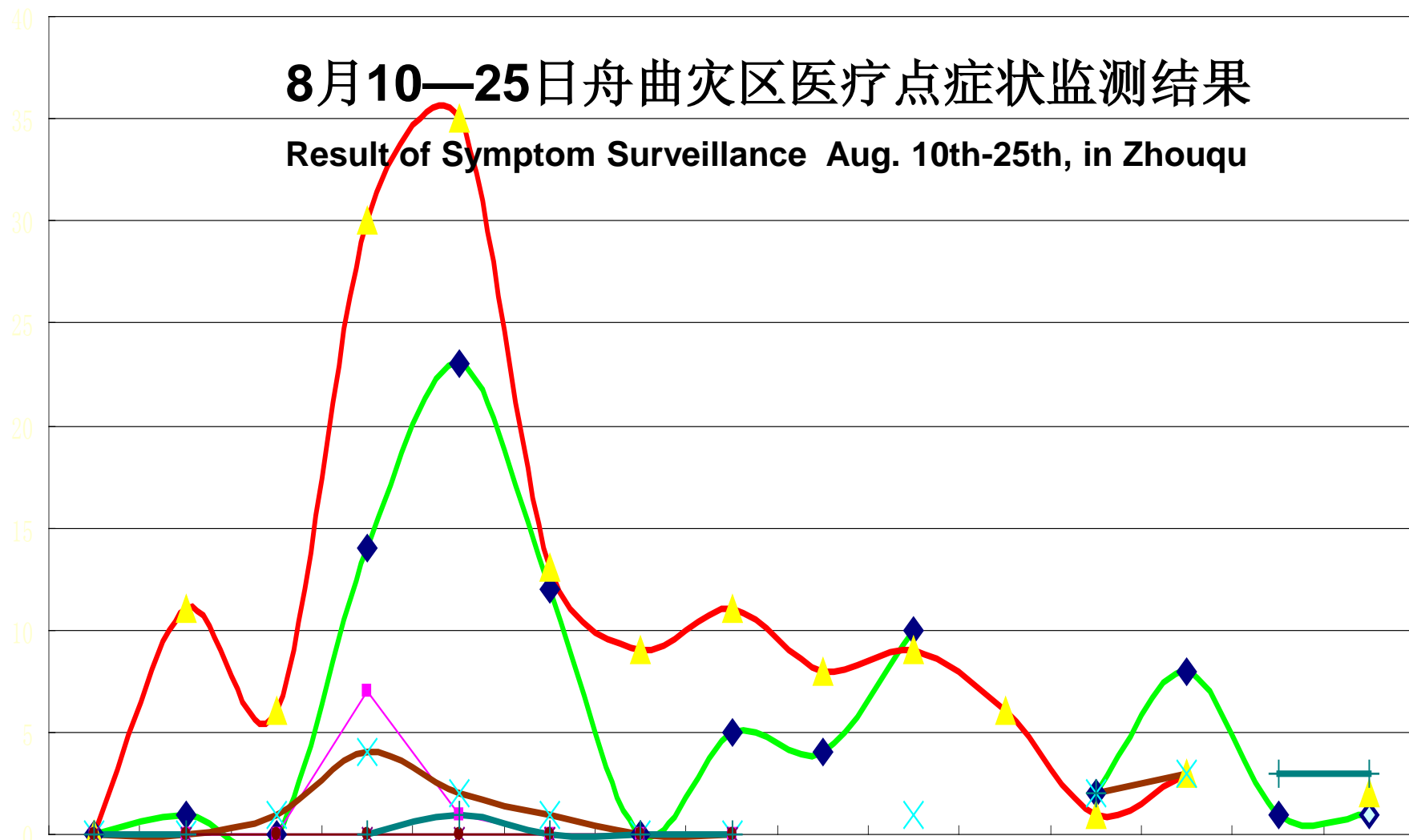


8月10-27日舟曲灾区医疗点就诊与症状监测阳性人数情况

Number of visiting patients & of Positive from Symptom surveillance among Aug.10th-27th

8月10—25日舟曲灾区医疗点症状监测结果

Result of Symptom Surveillance Aug. 10th-25th, in Zhouqu



Fever & Respiratory symptoms

Fever & Rash

Diarrhea & watery stool

Diarrhea & bloody stool

Acute icterus

Encephalitis

Other kinds of fever

Food poisoning

Lymphaden ectasis

Cough & emptysis

◆ 发热呼吸

◆ 发热出疹

▲ 腹泻水便

× 腹泻血便

* 急性黄疸

● 脑炎

— 其它发热

— 食物中毒

— 淋巴肿大

— 咳嗽咯血