Safety briefing for GLORIA Great Basin field workers

TL;DR (too long, didn't read): we care very much about your physical, mental and emotional well-being, on this GLORIA Great Basin field survey, and beyond. On this field survey, the most pressing hazards to your physical safety, in our experience, are as follows:

1. Slips, trips, and falls on rocky/unstable terrain.
2. Lightning storms and exposure to wind, rain and high elevation.
3. Getting lost or separated from the group: "lost and alone".
4. Neglecting personal care and hygiene: sunscreen, hydration, and consuming adequate calories.

Our work involves quite a few hazards. But in spite of repeated hikes to the summits, many hours spent in field work, by dozens of workers, over many years, we haven't had (and never want) a single serious accident. There is only one way to accomplish that—to be safety conscious all of the time. There is no piece of data we can collect that is worth an injury, not even one.

We'll be exposed to strong sunlight, high elevation, wind, cloud-shade, and very possibly rain or hail. Being prepared for the conditions includes:

1. Good footwear, and extra clothing to keep you warm and dry even in rain and wind.
2. Protection from intense sunlight: sunglasses (an extra pair too), hat, sunscreen
3. Enough water to stay well hydrated…at least a couple of liters for the day
4. Enough food to keep your energy up… a solid lunch and some mid-morning and mid-afternoon snacks

Effective response to accidents. Imagine someone falls and splits open a knee to the bone, or gets a severe head injury…what could we do to help them, and how long would it take us to summon help? We need to be able to offer basic treatment for the wound, to place an emergency call within 10 minutes of an accident, and to care for the patient for hours. Early request is critical, and even at we can wait 2 to 4 hours for help to arrive.

1. First aid kits, with key items, including a splint, at least available among the team members.
2. Communication between team members. We'll have small radios for each participant.
3. Cell/satellite phone to reach an emergency dispatch center.

Avoid the hazards of rough terrain and high places.

1. Step carefully and **don't get in a hurry** either hiking or working. Loose or projecting rocks and our survey strings are all tripping hazards.
2. When working near a drop-off **remain at least one step from the edge**. An accidental misstep or a bump from coworker or wind can then be countered without stepping over the edge.
3. When negotiating a steep pitch keep 3 of your 4 hands/feet on the rock at all times.
4. Be careful not to dislodge rocks, and avoid working directly above someone on a steep slope. If a rock falls yell "rock" to those below.
5. **Avoid lightning**. Heed the forecast and watch for signs of developing storms. Always leave in time to be well off the summit by the time lightning is a threat. Wet rocks can be much more slippery than they were as you climbed up, and a real hazard if you are hurrying down.
6. **Watch for altitude sickness.** If you get a headache, feel lightheaded, and especially if you feel nauseous, tell someone right away, drink more water (or Gatorade), and have a sit (in the shade if there is any!). Sometimes the feeling will pass, and you'll feel fine to carry on. By telling someone early, they can help you decide whether you should head downhill based on whether your condition is improving, staying the same, or getting worse. **The only sure cure for altitude sickness is going to a lower elevation!**

The hardest thing is to always be alert and careful, never letting inattention or impatience cause you to do something you'd regret. Try to be attentive every minute.

Everyone should know their location & the way back to base in poor visibility. Several team members should:
1. Have the simple tools, a map and compass, at least several team members.
2. Have a good GPS and input the location of camp or vehicle. And GPS coordinates (lat/long & NA 83 datum the best) are essential when requesting rescue response.

We respect your moral and legal right to medical confidentiality! We also have an organizational obligation to create safety reports for medical incidents that occur on our field surveys. We will not include personally identifiable information in these reports, and they will be used for the sole purpose of documenting safety incidents for the betterment of our protocols and response capabilities. We will create safety reports for all incidents requiring some sort of treatment or intervention.

Emergency information for each target region:

Yosemite-Dunderberg (SND):

Within Yosemite National Park: If you have an emergency, call or text 911. Ambulance service is available 24 hours per day.

Outside Yosemite National Park: Mono County Search and Rescue: For rescues, injuries, missing persons, and other emergencies call 911. See information under WIM/WDS below.

Death Valley National Park (DEV):

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
Cow Creek Ranger Station	579 Cow Creek Service Road - DEVA	760-786-3260 / Rogers	NO

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service	
Death Valley National Park	Cow Creek/Stovepipe Wells - DVP	760-786-2330/909-383-5651	ALS	BLS
Lone Pine Volunteer FD	Lone Pine, CA	760-876-4626 / 911		BLS
Mercy Air	Pahrump, NV / Ridgecrest, CA	800-222-3456	ALS	
CHP H80/82 (Air)	Apple Valley, CA	Request through FICC/911	ALS	

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
Desert View Hospital	360 S Lola Lane, Pahrump, NV 89048	775-751-7500	35 min	1hr	NO	NO	YES
Southern Inyo Hospital	501 E Locust St, Lone Pine, CA 93545	760-876-5501	1hr	2hrs	NO	NO	YES
Ridgecrest Regional	1081 N China Lake Blvd. Ridgecrest, CA 93555	760-446-3551	1hr	2.5hrs	YES Level IV	NO	YES
UMC Las Vegas	1800 W Charleston Blvd. Las Vegas, NV 89102	702-383-2000	1hr 25min	2.5 hr	YES Level I	YES	YES
Antelope Valley Medical Center	1600 West Avenue J Lancaster, CA 93534	661-949-5000	1.5 hr	3hr 45mi	YES Level II	NO	YES

Great Basin National Park (GRB):

- Call 911 in an emergency if service is available. 911 calls go to the White Pine County Sherriff's office in Ely, NV.
- Park staff will have handheld radios and satellite messengers for communications during surveys. Park dispatch can be reached via radio at 700 or by phone at 702-293-8998.
  The nearest hospital is an hour away from the town of Baker in Ely, NV. The nearest trauma centers are in Utah or Las Vegas.
- There is volunteer fire and EMS in Baker. Additional resources are located in Ely at least an hour away from Baker. Trailheads are another 30+ minutes from Baker. There may be helicopter EMS response available which will have an hour or more response time.
- Law enforcement staff is very limited in the park this summer.

White Mountains (WIM & WDS):

Nearest hospitals are in Mammoth, Bishop, and Gardnerville, for when prompt treatment is essential. Regional trauma centers are in Fresno and Reno. From Jeff & Jutta: Mammoth Hospital is overall a little better than Northern Inyo Hospital in Bishop, but anything altitude related should clearly go to Bishop from WMRC. The best, closest trauma center is Fresno Trauma Center.

Calls to 911 will go to CHP, to the Mono Co. Sheriff Office, from there to our SAR team. 911 call is good, and they will usually be able to get GPS coordinates from the calling location. Usually a significant loss of information along the calling chain, so, in addition, call the Sheriff Office (760-932-7549). You could also give Jim Bishop a call directly (cell: 760-937-6317). If you aren't sure whether or not to launch a search or rescue, please give me a call, and I may be able to help.

See http://www.monosar.org/ for more info on the SAR team. The Operations page has a good overview.

More information from Jim Bishop on initiating a Search and Rescue response, and handling medical emergencies in the field:

-In all cases better to call too early than too late. No one minds responding for a false call. Early start can help a lot; daylight is precious, injuries get worse, and lost people get much more lost. Search areas expand exponentially.
- Don't assume response will not happen until morning. SAR will usually respond at night, so always call.
- Assume that the dispatcher or SO contact knows nothing about our mountain geography.
- If giving GPS coordinates make sure to provide datum (NAD 27 or 83) as well as coordinates, whether lat-long or UTM. Lat. & Long. on NA 1983 datum us best.
-You may have to explain situation several times to different people: CHP, brief; SO, brief; SAR Ops leader (15 min); Base asst, several hours for a missing person.
- WIM & WDS will probably get Mono SAR, but could get Inyo SAR or both. Dunderberg gets Mono SAR.
- If acquiring info from other team members, be as thorough as possible, particularly for a missing person.
-Let SAR know how much cell phone battery you have. Can conserve by turning off and receiving calls at a specified time. Texting, vs calling, will save battery too.
-If at WMRC, it may be better to stay there to inform SAR by phone/radio rather than going out to look or help.
- No charge to victims for SAR (all volunteer) or most helos
- Ambulance and CareFlight (helicopter) will charge patient, not WMRC or GLORIA
- Response time is slow; Volunteers need time to pull away from jobs, family, etc.

- Helicopter units need to call in staff, do flight and maintenance checks
- Delay is frustrating for patients, helpers, and SAR. Count on 2-4 hrs. for help to arrive.

Helicopter resources (but will almost always have a ground response as well).

- A variety of helicopters and crews can be available (though not always), from CHP, Navy, Air National Guard, private medical, NPS contract. Some have hoists and long lines, some fly at night (about 50% chance of being available).
- It will help the responding agency to provide the best choice for a helicopter to have good basic information about the incident. In considering a request for a helicopter, be ready to provide:
    - coordinates in lat-long (not UTM); elevation; slope
    - nature of landing zone (LZ); obstacles and hazards
    - wind speed and direction; weather conditions
    - patient's injuries and background medical information

Helicopter safety

1. Rotor blast: Protect eyes and turn away when helicopter lands; hold onto or secure loose equipment or vegetation.
2. Stay in view of the pilot and approach helicopter only when signaled by pilot
3. Stay low and with nothing projecting upward; try not to approach from the uphill side
4. NEVER go behind the helicopter; the nearly invisible spinning tail rotor can kill you

<u>Handling a medical emergency, there are two main task you need to work through:</u>

TASK 1: Initiate the emergency response system.

1. Report the emergency
 - Call 9-1-1. You'll reach the Public-Safety Answering Point (CHP in this area). The PSAP dispatcher will direct your call to the appropriate agency (probably SO) to handle the incident.
 - You'll have to repeat the information for the agency dispatcher, and to add more detail.

2. Get across two main points immediately:
 - Nature of the emergency, and
 - Where it is (close enough that the PSAP dispatcher can hand you off to the proper agency).
 - Say something like "Medical emergency, west of Conway Summit, off-road area"
 - It is important to add some detail, such as patient injuries/condition, in the report to the PSAP. If communication with the agency dispatcher is lost, the link to PSAP can be re-established.

3. When the agency dispatcher (usually different from the PSAP) answers, again relate the type of emergency and location.
 - With the initial information the command center should already be dispatching the responders
 - Stay on the line, and add necessary detail about the patient's condition, the location, and what kind of vehicles or personnel will be needed for access (if the incident is not on a road).

TASK 2: Set up a basic organization

1. The incident commander (IC) should, if possible, remain free to oversee the whole operation.

2. Someone can handle the communications. That may require a person stationed at a point with good signal strength and connection to the command center, who can relay to the incident scene. Also, someone might be able to meet the responders and lead them in.

3. Someone should be leading the first aid efforts for the patient.

4. Someone not giving the first aid should just comfort and inform the patient of what is being done for them (not just empty reassurances, but helpful and realistic information). It may be useful to send someone to get more clothing, a sleeping bag, etc. if the patient will be there for hours, or even overnight. Food and water are generally good for the patient, unless it is expected that they'll be having surgery fairly soon.

5. If a helicopter is expected, someone should be identifying and preparing a landing zone (LZ)
- An area with open access, free of trees or poles or overhead wires.
- Ideally less than about 10-degree slope
- Ground should be fairly level and with no upward projecting large rocks or vegetation.
- Surface should be free of loose dust and other debris that can be picked up in the rotor wash.
- When the helicopter approaches a person can stand with back to the wind, arms outstretched in the wind direction, pointing toward the LZ. And/or some poles with flagging can indicate wind direction.
- Visibility from the air can be enhanced with a mirror to signal the aircraft, and/or bright-colored fabric on the ground.

6. Someone to review the helicopter safety points with the rest of the team, and to assign folks to help with the other tasks. Also, it may be useful to send someone to bring a vehicle or some needed piece of equipment.