

Medical Table Top Exercise (AK Cruisex 99)



Developed by CGD17 (mpc)

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Overall Results:

The tabletop scenario provided an excellent opportunity for the Cruise Line Industry, local ship's agents, the USCG, and Southeast Alaska medical providers to discuss issues involved in a large-scale medical scenario on a cruise ship. For many of the participants this was the first time they had jointly met to discuss such a scenario. Initially the group was very reluctant to choose a leader/spokesperson and to proceed through the exercise questions. The participants started by simply discussing what was important to their organization, which resulted in random and disjointed conversations. Several times the CG facilitators had to request that the group proceed through the handout questions as a tool for organizing their discussions. Once a spokesperson volunteered (i.e. the CG Air Station Flight Surgeon) the group quickly got on track. Representation by organizations at the exercise was very good. Unfortunately a representative from the State's Southeast Regional EMS Council was not present at the exercise. The scenario and the group's answers to the scenario questions are provided below.

Objectives:

The overall objective of the scenario is to review the emergency procedures that would be used in responding to a large-scale medical situation onboard a cruise ship. In addition, the discussions will also provide:

- The opportunity to expand working relationships within the response community.
- The opportunity for non-medical responders to learn the issues associated with a large medical response (e.g. Unified Commanders, Cruise Ship Operators, Pilots, Oil Spill Responders, etc.).

Ground Rules:

- The scenario is meant to generate joint discussions among the participants. It is not based on any risk assessments nor does it imply that the event is likely to happen. It is requested that the participants not spend time debating the likelihood or cause of the scenario. The scenario is not targeted toward a specific cruise line or past events.
- It is the responsibility of the group to organize themselves to effectively develop answers to the scenario questions and to identify a spokesperson to present their findings to the combined seminar participants (i.e. following the four tabletop exercises). Participants should work together as if they were coordinating on an actual event. Turn charts will be provided for the group to help record their discussions and for use during the combined presentation.
- A Coast Guard facilitator will be available to keep the group focused on the requirements of the exercise and to keep the discussions within the available time.

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- There may be more questions for this scenario than the participants will be able to answer in the available time. Participants should work through the questions as best they can; un-addressed questions will be used in future seminars/exercises. Participants are encouraged to continue to coordinate with each other following the seminar.

Scenario:

Date: 08-Sep-99 (Wednesday)

Time: 1500 Local (+8 Alaska Time Zone)

Location: 102 NM South East of Yakutat

Casualty: A cruise ship on a southeast course, heading for Cross Sound, experiences a sudden and complete loss of power. All systems are out including the navigation system, propulsion system, and backup power systems. The crew quickly reacts to the problem and completely restores power within 20-25 minutes. Unfortunately during the repairs the ship loses all steerage and settles into the trough of the sea swells. Heavy rolls are experienced and 29 passengers are injured (i.e. *information handouts were provided to the participants which detailed the injuries for 5 critical unstable, 10 critical stable, 5 immediate & 9 delayed patients*). The vessel's next port of call, Juneau, is 7.5-8 hours away at maximum cruising speed (i.e. arrival time of 2300-2400 Local).

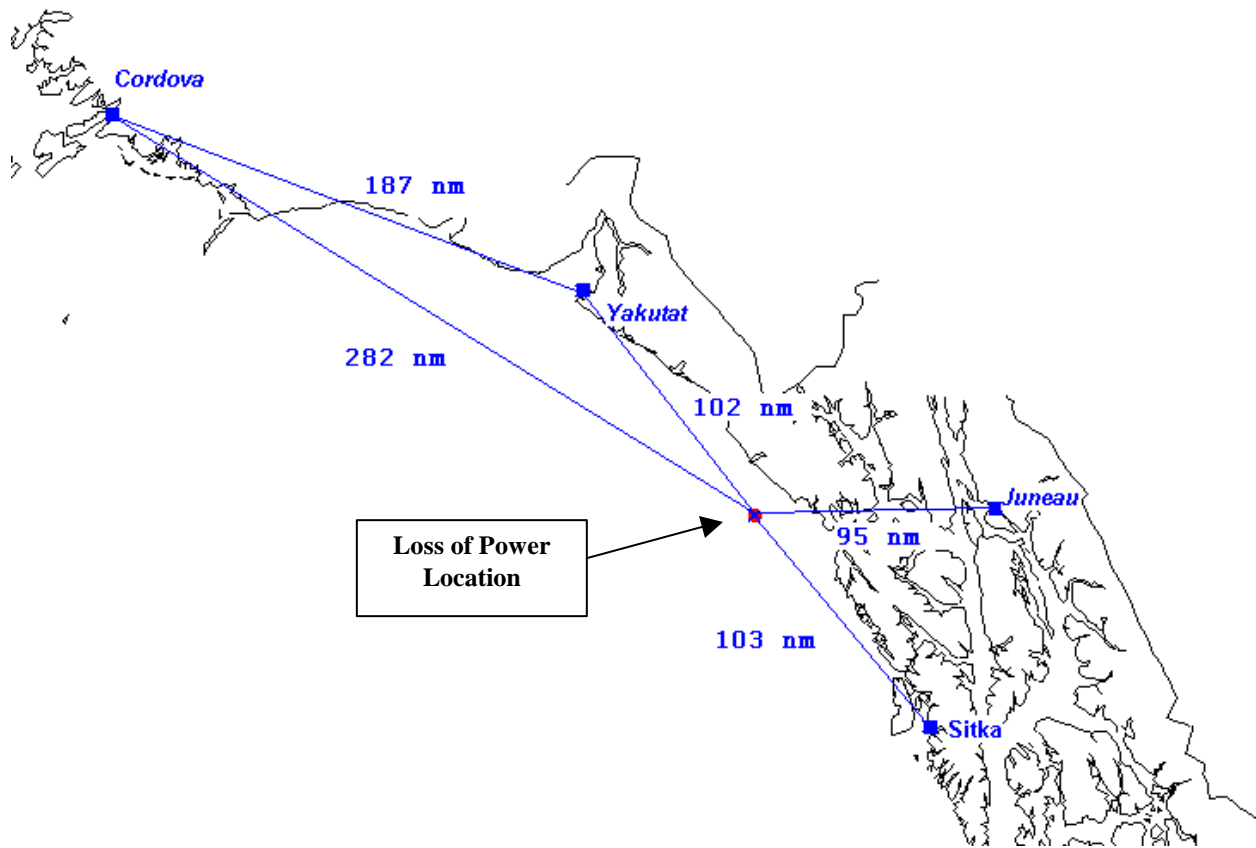
On-Scene Weather: Gale Warning (sustained winds of 34 to 47 knots from the southwest) with large sea swells from the southwest. Weather conditions are expected to upgrade to a Storm Warning (sustained winds of 48+ knots) within the next 12 hours.

Vessel Specifics: The vessel is approximately 700 feet long and has 1,500+ passengers/crew aboard. *Onboard medical capabilities handouts were also provided to the participants which were in keeping with standards established by the American College of Emergency Physicians (ACEP) guidelines for cruise ships.*

Other Vessels in the Area: The nearest vessel is another cruise ship (approx. 700+ feet, 1,500+ passengers/crew, and similar medical capabilities) which is underway in Glacier Bay National Park on a southern course. Its next intended port of call is Seward, AK. The vessel could be at the entrance to the park by 1700 Local.

Available CG Resources: Two CG H-60 helicopters are available; one in Cordova and one in Sitka. CGC Liberty is underway in Auke Bay, CGC Woodrush is in Bravo-6 Status in Sitka, and CGC Sweetbrier is underway in Prince William Sound. CGC Woodrush has an HS onboard (i.e. RN equivalent). CG AIRSTA Sitka's remaining helos are: one down for repairs (72 hours) & one south of Ketchikan recovering two persons in the water. The recovered boaters will be transferred to Ketchikan with mild hypothermia by 1600.

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The distances depicted above are for aircraft.
The on-water distance to Juneau is approximately 120 NM.

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Section 1: Initial Response

1. Ship's Internal Response:

- How will the medical staff initially address the limitations for patient care onboard the ship in this scenario? (e.g. staff fatigue, few monitored beds, limited equipment, etc.)

Onboard the ship the medical staff would initially activate the ship's disaster plan, start patient triage, stand-up an alternate infirmary location, and check the passenger manifest for passengers with medical qualifications.

- Are the medical capabilities for the ship in this scenario characteristic of other cruise ships facing similar circumstances (e.g. # medical staff, facilities, qualification levels, etc.)? What are the major differences?

The medical facilities and equipment onboard cruise ships are generally less than that which was scripted for the scenario (i.e. scenario used the American College of Emergency Physicians (ACEP) guidelines for cruise ships). Cruise Lines, however, generally working toward accepting these guidelines as industry standards. Additional information about ACEP can be found on the internet at <http://www.acep.org/>.

- What external assistance will the vessel request and whom will they request it from? (e.g. notifications, medevacs, equipment, medical personnel, etc.)

The ship would initially contact their Cruise Line HQ and CG Command Center in Juneau for assistance.

2. External Response:

- Which agencies will be involved in the external response?

Primary shoreside response organizations would be the USCG, local ship's agent (Cruise Line Agency of Alaska (CLAA)), and Local EMS providers.

- Who will lead the coordination of the external response?

The USCG would be the lead coordinating organization for the shoreside response.

- What information will external responders request from the ship?

Shoreside responders would require detailed information on patients, additional medical equipment requirements, and ship's intention for offloading the patients. Early

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notifications of these items and periodic updates by the cruise ship would limit the need for multiple communication exchanges between the ship and shore.

Section 2: Medevacs

- What logistical timeframes are involved for CG aircraft? (e.g. refueling, max. crew flight hours, on-scene hoists, transit times, etc.)

Initial time frames for CG helicopters arriving on-scene, based on the scenario, were as follows:

- 1st CG helo from Sitka on scene within 1.5+ hours.
- 2nd CG helo from Cordova on scene within 2.5+ hours.
- 3rd CG helo from Sitka on scene within 3+ hours (i.e. following completion of a SAR case in Ketchikan).

The cruising speed of a CG H-60 helicopter is 125 KTS. For this scenario, any responding helicopter would take over an hour to arrive on-scene from the time of wheels up. CG Air Stations have 30 minutes from first being directed to launch to the time the helicopter can get airborne. Adding in the delay for getting the appropriate medical personnel on board, it may take up to an hour to get airborne.

Based on the vessel's distance from available CG aircraft, not all the patients who required medevacs would be transported off the ship before it would arrive in a Southeast port. The likely number of patients transported for this scenario would be from 4 to 10, depending on the final destination of the ship.

- What are the restrictions for transporting patients via CG helicopter? (e.g. levels of care, weather conditions, weight of patient, required equipment & personnel, Can a CG helicopter land on the ship to expedite patient transfers?, etc.)

Four restrictions for CG helicopters conducting medevacs were discussed:

- Limited visibility would be a concern, in addition to winds, as the offshore storm system grew nearer.
 - Helicopter cabin space is limited by patient size, the need for attending medical staff, and equipment requirements. Most likely only one patient per helicopter would be medevac'ed at a time.
 - Hoist limitations were not a concern (e.g. one of the patients was 300 lbs).
 - CG helicopters cannot land on cruise ships to facilitate patient transfers due to the rotor wash from the blades.
- Are commercial helicopters available for medevacs and what are their capabilities?

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Commercial helicopters would not conduct hoists from the cruise ship. However, they would be valuable in ferrying patients from a shoreside, landing site to a major Southeast community.

- For this scenario, how many patients can be medevac'ed from the ship (based on the scenario - available helos, changing distance to vessel as it transits toward a port, number of patients per trip, transferring medical supplies to the ship, etc.)?

The discussion of where the vessel should go, to facilitate medevacs and to offload the remainder of the patients, resulted in no definite conclusion for the scenario. The discussions primarily addressed the following issues:

- Logistical timeframes for medevacs.
- Navigational hazards (i.e. North Indian Passage).
- The weather system (and its effect on the ship, aircraft, and remote airfields).
- The amount of time the majority of the patients would remain on the ship.
- Varying patients care levels during transfers (e.g. CG helo vs. remaining on the ship).
- Trauma associated with the number of transfers required per patient (e.g. ship to lifeboat to ambulance to aircraft vs. ship to ambulance on pier).
- Logistical and safety issues associated with transporting additional medical staff to the vessel.

Three courses of action were discussed. All solutions favored the transport of additional medical personnel to the ship (i.e. a Medical Away Team). Sitka as an offload destination and the potential for further power loss problems on the ship were not discussed.

Option 1. Have the ship transit north to **Yakutat** to offload the patients by the ship's motorized lifeboats (approx. 5-6 hours away). Medevacs would be conducted to Yakutat and/or Juneau. Additional medical personnel would be transferred to the ship. Commercial and military air ambulance service would then be coordinated to transport the majority of the patients out of Yakutat.

- Driving factors in favored of this solution were: strong currents/poor weather conditions in North Indian Passage potentially pose a major hazard to navigation for the ship.
- Major drawbacks to this solution were: the ship would be operating in the open ocean, the ship would be heading toward the storm and away from shoreside medevac support, patient transfers in port would be by lifeboat, aircraft may not be able to get in and out of Yakutat as the weather worsens, the community of Yakutat's has a limited ability to help the patients if air support as shut down by weather, and fewer medevacs could be conducted directly to Juneau due to the increased distances as the vessel transits north.

Option 2. Have the ship transit to **Bartlett Cove**, just north of Gustavus, to offload the patients by the ship's motorized lifeboats (approx. 3-4 hours away). Medevacs would be

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conducted to Gustavus and/or Juneau. Additional medical personnel would be transferred to the ship. Commercial and military air ambulance service would then be coordinated to transport the majority of the patients out of Gustavus.

- Driving factors in favor of this solution were: Gustavus was the nearest port, other vessels operating in Glacier Bay could be called upon to assist, and the ship would be closing the distance to available aircraft as it transited eastward (thereby facilitating more medevacs).
- Major drawbacks to this solution were: strong currents/poor weather conditions in North Indian Passage potentially pose a major hazard to navigation, patient transfers in port would be by lifeboat, aircraft may not be able to get in and out of Gustavus as the weather worsens, and the community of Gustavus ' has a limited ability to help the patients if air support is shut down by weather.

Option 3. Have the ship transit to **Juneau** to offload the patients at a pier facility (approx. 8-9 hours away). Medevacs would be conducted to Juneau. Additional medical personnel would be transferred to the ship. Commercial and military air ambulance service would then be coordinated to transport the patients out of Juneau.

- Driving factors in favor of this solution were: the ship would be the most stable location for the patients, greater numbers of medical personnel could be transported to the ship, patients transfers could be conducted at a pier, and the ship would be closing the distance to available aircraft as it transited eastward (thereby facilitating more medevacs).
- Major drawbacks to this solution were: strong currents/poor weather conditions in North Indian Passage potentially pose a major hazard to navigation and the increased timeframe before the majority of the patients would be off the ship.

Section 3: Patients not Medevac'ed

- What is the typical number of shoreside medical staff who could be available for transport to the ship? What are their training levels?

Medical personnel (and qualification levels) available in Southeast Alaska for potential transfer to the ship are listed in "Basic Medical Resources - Ports Served by Cruise Line Vessels". This document is updated and distributed annually by the Alaska Department of Health and Social Services during March/April. Additional information is also available on their internet site at http://chems.alaska.gov/alaska_ems.htm.

- What medical equipment is available in Southeast for transfer to the ship (e.g. cardio scopes, O2 tanks, etc.)?

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Medical equipment available in Southeast Alaska is also listed in "Basic Medical Resources - Ports Served by Cruise Line Vessels". Several facilities maintain a "disaster cache" but the contents of the cache are not listed.

- Would the medical resources of the nearby vessels (i.e. the cruise ship operating in Glacier Bay and CGC Woodrush) be useful to the response? What considerations are involved? For this scenario, how would the transfers of personnel and/or equipment occur and when would they arrive on the ship?

Medical support from the nearby cruise ship in the scenario would only be used if weather conditions were acceptable for helicopter hoists. Transfers of personnel and equipment by motorized lifeboat at sea were not considered to be safe.

- Are additional training requirements needed for personnel who go out to the ship?

No additional training requirements were discussed for personnel who would potentially go out to the ship (i.e. the Medical Away Team). CG representatives stated that the aircrews, just prior to a hoist, conduct helicopter hoists briefings.

- Are there liability issues involved in sending personnel out to the ship?

The "Good Samaritan" Act covers liability issues for medical personnel when they respond to emergency situation, as long as they respond within their certification limits.

Section 4: When the Patients reach a Southeast Port

- Once in port, what are the medical concerns for transferring the patients from the ship to medical facilities (e.g. pier capabilities, available ambulances, etc.)?

Once at an Alaskan port the following issues were mentioned as logistical concerns for handling the patients:

- The limited number of ambulances available in communities will slow patient transfers on shore.
 - Juneau has 3 ambulances and one hazmat rig which can be utilized.
 - Yakutat has 1 ambulance.
 - Gustavus has 1 ambulance.

Commercial/military aircraft should be in standby for immediate transfer of the patients.

- What are the facility limitations for providing medical care in Southeast Alaska (e.g. # of beds, specialized equipment, lab/X-ray services, etc.)?

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Medical facilities (and their capabilities) in Southeast Alaska are listed in "Basic Medical Resources - Ports Served by Cruise Line Vessels". However, the number of hospital beds available (both monitor and unmonitored) is not listed. This information would ensure that hospitals are not inadvertently over tasked when transfers of large numbers of patient are coordinated during a response.

- Transfer of patients to facilities outside Southeast:
 - When the capabilities of Southeast Alaska medical facilities have been exceeded, who will coordinate the transfer of patients to secondary receiving facilities?
 - What resources are available for these transfers?

The ship's agent and the primary receiving hospital would coordinate transfer of patients to secondary facilities as resources in Southeast Alaska reach their capacities. Juneau Air Ambulance and the National Guard were mentioned as resources for transferring patients out of Southeast AK. Runways utilized by medical facilities are provided in "Basic Medical Resources - Ports Served by Cruise Line Vessels".

- For this scenario, where would the patients end-up (i.e. how many patients at which facilities) and how would they be tracked?

"Disaster Tags" were discussed as being an integral part of an effective patient tracking system. Once the patients are transferred off the ship the CG, ship's agent, and EMS facilities need to coordinate the tracking at intermediate and final destinations. This information should be continually updated for the Cruise Line who will be handling phone calls from the public.

The group agreed that additional work on tracking procedures needs to be jointly developed. Cruise Line representatives stated that a paper was being developed by industry on this issue. CG representatives suggested that the Airlines might be a good source for tracking procedures (e.g. TWA 800 crash) and that the Juneau Command Center would most likely activate extra staff to form a dedicated tracking unit for the CG response (CG CAT).

Additional Issues.

1. Medical Away Teams. Though the group generally agreed that additional medical personnel might be requested by the vessel in this scenario, currently no formalized procedures exist for such a request. If the Coast Guard received word that the vessel was requesting additional medical personnel and/or equipment how would this be coordinated (e.g. rapid identification of available resources, logistics to the vessel, team leader identified, etc.)?

2. Tracking Equipment. Southeast medical facilities who provide equipment for a response need to ensure that their equipment is prominently marked and that they provide the ship's agent with the appropriate serial numbers.

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3. Customs Issues. In accordance with the Jones Act, passengers/personnel who board a cruise ship in Alaska are required to disembark in Canada (or pay a \$1,000 fine per person). During a contingency these requirements would most likely be waved, however, the Customs and Immigrations Service should be notified and they will require appropriate documentation. This requirement should be added to the tracking procedures in effect for the response.

4. Medical Communications between the Ship & Shore. Direct shoreside communications to the ship's doctor are limited for several reasons:

- Only one or two lines are available on cruise ships to communicate to shore.
- These systems are primarily used for navigation/operational functions and therefore are going to be heavily utilized by the ship's bridge during a contingency.
- These lines are generally located on the bridge of the ship and cannot be "patched" to the ship's infirmary. Therefore a member of the medical staff must be on the bridge to communicate.
- During a large medical emergency the ship's doctor will most likely be attending to patients and will assign a nurse to handle communications with shoreside medical responders.

As a result of these communication limitations, standard medical checklists were discussed as being the primary method for communicating the medical situation on the ship to shore. It is important that these checklists be sent as soon as possible to facilitate the shoreside medical response.

In addition, if a "Medical Strike Team" is transported to the ship it was highly recommended that they come with a portable and effective means to communicate back to shore.

Summary Debrief to Exercise Participants (by Dr. Pennington – Coast Guard Air Station Sitka)

I'm a flight surgeon with the Coast Guard and I was involved in the large medical evacuation scenario. I'll tell you a little bit about the scenario and some of the issues that we discussed and some of the things that we felt were important for follow on after this seminar is over.

The medical tabletop exercise had a lot of the same elements as the other scenarios you've already heard, but we focused mostly on the medical aspects. The scenario is a ship 102 nautical miles southeast of Yakutat. It's approximately 3:00 p.m. on September 8th, 1999. It's a cruise ship in gale force winds expected to worsen and be upgraded to storm conditions. They are approximately eight hours away from the port of Juneau at maximum speed. The event is a total loss of power because of an imbedded chip with the Y2K bug. The crew of the ship reacts very quickly, restoring full power and steerage within approximately 20 to 25 minutes, however, there have been 29 casualties aboard of various severities.

The scenario had four sections, and each section had a number of bullet questions to address. We did manage to get through all of the sections. I won't go point by point, but I will give you some highlights of what we talked about.

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We tried to identify resources and who the players would be. The players certainly were cruise ship personnel, Coast Guard personnel, local EMS, commercial EMS, and air medevac services and local hospitals. The coordination of the players was the next area that we spent time on, trying to figure out who was going to do what and who was going to be in charge. The cruise ship people were clear that they had a couple of things that they needed to do. They had to be very careful to remain in contact with their home office people and that they would notify the Coast Guard as a point of contact for a response to this maritime medical emergency. The Coast Guard was then to enlist the aid of other agencies as the situation developed and as the need became apparent. So, the coordination was through Coast Guard and involved other agencies, including but not limited to the National Guard, Red Cross, and the like.

A lot of discussion went around some of the things that I think were common threads to the rest of the scenarios. One was the wish to have a lot of information early on, and that would do a couple of things. It would allow people to start marshaling their forces and be able to spool up to be able to respond. Early notification of the Coast Guard and other assets is important. The other was to cut down on interruptions by people calling for repeated bits of information. If you get a lot of people calling, each one wants one little bit of information, and it's very distracting for the people who are trying to take care of these large number of casualties. The interruptions distract from what they're doing, which is to try to provide medical care to their victims, in order to answer the telephone or talk on the radio. One of the things was to get a lot of information in a data versed, without lots of interruptions by repeated phone calls or radio calls. I think the representatives of the cruise ship industry did a fine job in letting us know there are limited communications on board their ships. There may be only one or two lines that are available, and the use of those lines has to be prioritized as to what they're going to be used for. So, the request was to get a lot of information without lots of interruptions and to get the ball rolling early.

One of the other things that we talked about was something that became apparent; that the priorities of the different players are different and that sometimes interferes a little bit with cooperation. One group might have priorities that are very different from the other group, and trying to identify those potential conflict areas and deal with those up front so that we are all cooperating and know what the intention is and where we're going to go. I heard from some of the other people that you had similar findings. Not everyone's priority list was the same.

We worked through all the issues of how are we going to get these medically sick and injured people to where they needed to go. And we included the Coast Guard helicopters, other commercial aircraft that might be able to ferry people from one point to another or meet the incoming stream of victims and then go on from there to a stabilization medical facility and then on to definitive care as necessary. One of the issues that became important and clear to us is that keeping track of all that, and I think accountability was mentioned a number of times, is very difficult and very important. I certainly understand the cruise ship representatives' reluctance to let people off the ship unless they have some way to find out who got off and where they're going.

Similarly, when you have a disaster, I know that for many real disasters and disaster drills, tracking patients is very difficult. If there's a language barrier or there is an injury that precludes

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communicating with the patient, it's very difficult to find out where they went. The more people involved, the more difficult it is. So that was identified as one of the follow on things that needs more discussion, is accountability, this how do you keep track of who's on the ship, who's not on the ship, and where they end up.

I also was part of the next follow on item. The relay system to feed the information back to the cruise ship representative home office or agent so that they can start responding to the multitude of phone calls that come from family members of one of the victims. They're not sure or they are a media person. We all know what the cascade of telephone calls is like. The feedback system to provide information about where those patients ended up gets back to the host cruise line. That was identified as another important follow on topic that we weren't going to be able to solve today.

There was a lot of discussion on the Away Team. I can see in my mind the idea of lots of these Away Teams scurrying around on this ship and that it adds to the nightmare of keeping track of who's where doing what. There was discussion of a medical Away Team that would be comprised of local responders with the sort of skill levels and equipment that was identified by the staff of the ship saying this is what our shortfall is in personnel and equipment, this is what we need. One of the first things we would do would be to provide an Away Team at that skill level with that equipment to be used on the ship in order to assist the overwhelmed staff of the ship.

One of the other things we did talk about later was the resource guide that people use in the cruise ship industry to know what resources are available. Are there doctors there? Is there a blood bank there for a transfusion? What kind of surgeon is available? Etc. There are some resources and the potential exists to augment that with a physician director that's updated on a regular basis and that could be provided to representatives of the cruise ship industry.