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An Introduction to Mass Gatherings

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Contents

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There are a variety of definitions of mass gathering in the literature ranging from 1000 to 25000 people[1] however the accepted definition is a temporary collection of at least 1000 persons gathered at a specific location for a defined period of time for a common purpose".[2,3,4] The duration of mass gatherings can last anywhere from one hour to several days or weeks.

Despite the fact that these events are typically self triaged [with people who are ill usually staying away] they generate a higher incidence of injury and illness then the general population statistics. [5]

In the post-9/11 world there also is increased needs to consider catastrophic attacks or accidents in other environments that are virtual mass gatherings and, as such, are potential sites for mass casualties. These could include airports [for example the recent LAX shootings], large shopping complexes [the recent Kenyan shopping mall terrorist attack], mass transit etc. As such it is important for all members of the emergency medical system to have an understanding of mass gathering events.

Furthermore mass gathering provides a practical opportunity to prepare for mass casualty events and improve the level of disaster preparedness at the municipal provincial and national levels.[6]

Multiple factors have been identified that influence the demand for healthcare during such an event. The key identifiable modifiers are:
- Weather [temperature and humidity
- Duration of the event
- Whether the event is predominantly outdoors or indoors
- Whether the crowd is predominantly seated or mobile
- Whether the event is bounded [fenced or contained] or unbounded
- The type of event
- The availability of alcohol and presumptive availability of drugs
- The mood of the crowd
- Crowd density/geography of the venue
- Age of the crowd [7]

In essence these can be categorized as three over arching groups: biomedical, environmental and psychosocial. Each one of these will have an impact on the nature of the patient number of patients and the nature of injury or illness.

MEDICAL CARE AT MASS GATHERINGS.

The goal of provision of medical services to mass gathering include:
- Preventative medicine [identifying patients at risk and early intervention]
- Public health measures [water protection, food protection, syndromic surveillance, disease tracking etc.]
- Rapid access to injured or ill patients
- Provision of triage in the field and at aid stations
- Providing on-site care for minor injuries and illnesses [typically between 80 to 90% of cases]
- Effective and timely stabilizing and transporting those patients requiring evacuation
- Documentation of care provided the key elements of a health services plan in a large gathering would include the following:
  - What: the scope of services
  - Who: the types and number of healthcare staff required
  - Where: the number and types of facilities required
  - When: the timing of planning, preparation, staging, care delivery and wrap up
  - How: key and enabling support services [collaboration/partnerships, command-and-control and communication[8]

The components to public-health response in a mass gathering include food management, water management, waste management, identification of local hazards, identification of communicable diseases increasing of contacts, potential quarantining of the population at the event.

GENERAL STRATEGIES.

1. Surveillance

It is important to coordinate the health care plan with public health. This would include identifying condition subject to mandatory reporting in order to provide public health with an early warning of illnesses that may require contact tracking. Further, in the case of a longer gathering, there are trackable sentinel events in the community that might be of use to the event coordinators such as the sale of over-the-counter preparations for diarrhea or fever.

2. Prevention

The ideal strategy is to minimize patient encounters by mitigating risks in advance. The key items this applies to are water, weather and whereabouts. A common cost recovery strategy of event organizers is to sell water at outdoor events. In order to avoid one of the most common presentations for healthcare, namely dehydration, the crowd must-have access to water at low or no cost. This should be coupled with a communication strategy encouraging participants to keep themselves well hydrated.

Insofar as weather is concerned many mass gatherings take place in open spaces with no shade leading to exposure injury. Water sprinklers, shade, advisories to wear hats etc. are all useful mitigating factors. Conversely in cold-weather the provision of blankets, heated areas etc. will have the same beneficial effect.

Finally, another preventative measure is optimization of the site venue and terrain. This would include identifying hazards and fencing them off, guiding pedestrian flow to safer areas, provision of adequate lighting and signage, separation of the audience from areas of traffic and industry, making sure that there is adequate egress from the site in the event of a rush and ensuring that facilities are not overloaded or at risk of collapse.

3. Diversion

A small event may only require first aid providers. However, as the event becomes larger, more complex or of longer duration the need for a more sophisticated and tiered healthcare plan becomes necessary. This can range from basic paramedics to advanced paramedics to field hospital with nurses and physicians. Once a complex system is established the question arises which patient is treated where.
Not all patients presenting for healthcare need the full array of resources available. Ideally patients should receive the simplest and quickest response that matches their needs. There's no reason to register a patient who only requires a Band-Aid. First aid providers should be able to treat and discharge patients who do not require higher level of care at the field hospital (if one is deployed). If patients do present to the field hospital paramedics should be placed at the hospital entrance so as to see who they can treat on arrival and avoid an unnecessary registration/admission. This allows for an optimum use of all resources.

In preparing your plan there are four key questions the planner must ask themselves.
- What is the expected volume of patients?
- What is the most likely type of injury?
- What is the level of care that will be provided?
- What is the worst possible scenario?

1) What is the expected volume of patients?

Generally speaking, in order to determine what might be the pattern of injuries and what the worst-case scenario possibilities are it is useful to look at historical data on past events of the similar nature.

The range of possible presentations per 10,000 attending is quite large and the question arises whether this is a function of the nature of the event or the size of the event. It has been demonstrated that the prediction of patient presentations requiring healthcare cannot be based on crowd volumes alone.[9]

Reviews of literature typically define patient volumes based on number of patients for 10,000 spectators. The nature of the event correlates for more with the number of patients per 10,000 then the absolute number of people attending[10].

A review by the Lorenzo noted that the range of patients can be between 2.6 and 3.3 patients per 10,000 spectator at basketball and football games [close environment seated patients, limited access to alcohol and drugs] to almost 10 patients per 10,000 spectators at rock concert [Open environment, mobile crowds and access to drugs and alcohol].
Events were categorized into small [less than 1000 participants] medium [1001 two 50,000 participants] enlarge [over 50,000 participants. They were further classified into public exhibitions, concerts, athletic events other than football and football. While it is clear from the data that there were more absolute presentations in larger events [if only because of the larger volume of people attending]. The data as presented in this paper is confounded and as such event type and event nature cannot be separated. Other data [reference] suggests that the nature of the event is a more predictive identifier of the number of casualties per 10,000 attending.

2) **What is the most likely type of injury?**

Not only is the range of presenting patients large, the range of patients transferred to hospital is equally significant and can range 60 fold between events[11]. This raises the question of what the ambulance capacity at a mass casualty event needs to be. There is very little evidence to guide policymaking on this issue and one suggestion is to set a community baseline as the appropriate standard for requiring standby advances at mass gatherings[12].

In other words if the baseline ambulance transport rate is one transfer for 20,000 people every six hours then the same rate needs to be assumed as a baseline rate for the mass gathering event. This may be due to the South triage of sick people who do not attend most mass gatherings resulting in a lower than baseline transfer rate[13].

A study that looked at injuries arising from a public event with 622,234 attending identified a total of 1028 patients presenting of which 26% were injury most common of which were minor wounds treated on-site and [18%] fall by lacerations [70%] over all the injured persons.[14]

A review of all EMS records on patient presentations at mass gatherings between October 24, 2009 and August 27, 2011 showed that the range of patient encounters was from 5 to 20 per 10,000 participants. The vast majority [95.97%] of cases were mild in severity [not require transportation the hospital] , female [16.3%] with a an average age of 33 years.[15]

A review of visits to the infirmary at the New York State Fair between 2004 and 2008 showed 4.8+ -1.1 visits per 10,000 patrons. Of these the average transfer the hospital was 0.27+ -0.114 10,000 patrons. In this study 58% of patients seen were female. The most common reason for being seen was dehydration or heat-related illness [predominately female] followed by abrasions and lacerations [gender indiscriminate] follow by fall injuries [more common in

females over age 40]. These three categories comprise 32% of all presentations with the remaining 69% divided between 33 categories. Since the bulk of the complaints or treatable on scene it is not unreasonable that the number of patients requiring transportation to hospital was low.

3) What is the level of care that will be provided?

The level of health services can range from first aid to full resuscitation. It is important to ahead of time what level will be provided. For example in world youth Day 2002 the decision was "to provide participants with the level of medical services comparable to that available to the general population at local emergency rooms"

The level of care is to be delivered will determine the supplies and human resources required. There are a variety of supply lists available [insert two references here] and each event needs to fine-tune these lists to their own needs.

Generally speaking there are two ways to provide care at a mass gathering. The "stay and play" approach or the "scoop and run" approach. To some degree the choice of which method used will be determined by the event itself. The scoop and run approach, namely the provision of basic care and rapid transfer to a facility for provision of definitive and ongoing care, is feasible in an event where it is possible to rapidly and safely move the patient to another venue. When this is not possible then the organizers have no choice but to provide at least some "stay and play" capability. Under this model a larger proportion of the initial or definitive care is provided on scene. There will always be the need to evacuate certain patients that will require care beyond the scope of a medical aid station. Any plan for mass gathering must involve some evacuation planning.

The choice of which strategy to use will depend on ease of access to a local facility [hospital, trauma center, regional clinic etc.] and the capabilities of your staff [volunteer provided first aid versus advanced paramedics]. In addition the chosen strategy will be influenced by the resources that can be deployed on site. Large events with no budget will not be able to deploy high-tech capability.

Furthermore the level of care available needs to be considered. This can include whether or not advanced life-support care is required or available [including defibrillation capability] and whether the minimum level of care includes advanced or basic paramedics or volunteers. NAEMSP in their position paper list all essential illnesses or injuries for which it is their opinion that EMS crews should be able to provide at least initial care on scene[16]. These are listed in table 1.

4)   What is the worst possible scenario?

This could include collapse of structures at large outdoor concerts, panicking rushing crowd in an enclosed space or aircraft crashing into the audience at an airshow. It should not be the expectation of the event organizers or all the providers of healthcare that they will be able to

respond to that kind of event however it is definitely the responsibility of the health care plan for that event to put a plan in place. This could include coordination with local facilities, local EMS, who is in charge of triage, who invokes a disaster plan, how does the event disaster plan interface with the regional disaster plans etc.

Table 2 (page 7) is a checklist of questions that help define the above.

ANTICIPATING HUMAN RESOURCES REQUIREMENTS.

Abdominal pain/problems

Airway obstruction

Allergic reaction

Altered mental status

Animal bites

Back pain (traumatic and non-traumatic)

Burns

Cardiac/Respiratory arrest

Cerebrovascular accident (CV A)

Chest pain and cardiac symptoms

Diabetic emergencies

Electrocution

Environmental emergencies

TABLE 1: Essential Emergency Medical Capabilities at Mass Gatherings adapted from NAEMSP[16] by Dr. Justin Maloney

Once volumes and types of patients and level of care are determined then it is reasonable to consider the human resources requirements. In the absence of clear guidelines as to how many staff and what staff composition is necessary for an event there have been a variety of strategies applied. Once the estimated number of patients presenting has been determined it is safe to assume that up to 20% of those would be serious enough to require observation. This number can then be used to derive the number of beds required with the rest of the patients treatable in chairs or in ambulatory fashion. Once the number beds has been determined one way to determine the staff is to apply the staffing standards of an emergency department that would treat the same numbers of total patients/day.

As a general rule of thumb the basic level of staffing required is at least two paramedic teams per 10,000 people anticipated. Registered nurses with appropriate training can be substituted for paramedics. For events with more than 50,000 people one or two physicians how are required. Depending on the duration of the event there will be a need for rotating staff. The scheduling of the staff requires an overlap time to accommodate for the possibility that it may be difficult to access eight stations through crowds and there may need to be a handover of patients were staying on site. All the above can only serve as a general guideline because, as mentioned earlier, the nature of the event will determine the medical need. If you anticipate a higher volume of patients and are not sure of the amount of staff acquired another general rule of thumb is that each patient encounter requires on average 20 minutes per patient [this includes charting and cleanup[17]

If the nature of the events poses a risk for high acuity injuries then the percentage of physicians and nurses and staff should be increased. In addition to this there is room for a 10 to 15% inefficiency factor based on the potential for problems that would not exist in a standard emergency room setting such as staff not being able to access the site and prolonged evacuation times because of difficulty with evacuation.

Emergency services workload, while measurable and predictable over long periods, is inherently unpredictable moment to moment. The risk of a sudden untoward events and subsequent surge in healthcare requirements is higher at a mass gathering than in the normal healthcare environment. Thus any plan needs to include in it a contingency for rapid expansion of both staff and treatment space. In the event of a true disaster the health care plan needs to be integrated into the overall incident management response.

All medical staff require identification badges and passes. Furthermore if there is anticipation of large crowds they need to be given access to nearby parking so as to allow for rapid shift change. While on duty all staff need to be wearing easily identifiable uniforms that are distinct the different from those of other officials on-site [police, security, organizers, talent etc.]

It is important to keep in mind that in our environment of finite resources if healthcare staff or other capabilities are being withdrawn to the mass gathering site that, in of itself, has an impact on the existing healthcare system. It is important to try and design the mass gathering support in a fashion that will minimize the impact of the event on existing services. In order to do this the mass gathering health care plan should try and minimize the amount of patients transferred from the event to emergency departments, minimize the drain of staff and other healthcare resources from the local pool and coordinate care delivered on-site with the existing healthcare system. This would ideally include coordination of EMS dispatch such that people on-site can use the usual emergency number and that some central authority knows where resources are being deployed.

Definition of the event organisational structure:

1. Who is in charge of the event?
2. Who is in charge of providing medical care?
3. Who is in charge of paying for the events
4. What other resources are there away from the medical [fire, police, security, volunteers].
5. Who is responsible for facilitating a disaster plan?
    a. Make sure you have a contact list with phone numbers and radio frequencies
    b. Make sure that all levels have a chance to meet
6. What is the local EMS/hospital disaster plan? Make sure your system is integrated into it

Definition of the task asked of the medical team:

1. What specific service is being requested?
2. Is that service reasonable in view of the event characteristics?
3. Who has done this before?
4. What has been done previous similar events? No need to reinvent the wheel.
5. Do the allocated resources match the task requirements?

Event characteristics:

1. Duration
2. Time of day
3. Size and topography of the site
4. Access routes [ingress and egress] to the site
5. Indoor or outdoor? Outdoor events are impacted upon by weather, bodies of water, cliffs, deep gullies, buildings with balconies which pose risks of fall and drowning. Events held in proximity or inside areas of woods or dents brush may result in and take bites poison ivy and snakebites. Lack of shaded areas will increase the heat exposure and burns
6. What is the anticipated weather?
    a. If the event is indoors this may be a less relevant to the event itself but may become relevant in terms of evacuation of individuals or large numbers of people.
    b. For outdoor events exposure injuries become more relevant. Extreme temperatures or the probability of thunderstorms will affect the nature of injuries and the design of the medical station.
7. Is the event static or mobile? In other words are the crowds going to be stationary one location [either standing or seated] or will the audience of potential patients be moving [like a large marathon]
8. How many people will be attending?
9. What are the ages of people attending? If the event is anticipating a large number of children this will have a unique set of medical requirements. The range of conditions the children present with are different from those seen in the adult population[1]
10. Will alcohol or drugs likely be on site? Presence of alcohol or drugs may need to overindulgence and inappropriate behaviors. This may also have an impact on the medical station to do the need to restrain or sedate patients.
11. What is the possibility of violence [political rallies, sport hooliganism etc.]?
12. What is the possibility of staff being attacked by the participants? This should be part of the discussion out of time with police and security.
13. What is the expected number of handicapped people in attendance [this will determine needs for transport and wheelchairs and special access routes].
14. Does the event have attending talent such as VIPs, high government officials, foreign dignitaries, pop stars etc.? This may lead to questions over jurisdiction [indication of foreign visitors] as well as questions regarding who's in charge of the well-being of the talent.
15. What are the boundaries of authority and responsibility? Are there physical boundaries to the facility which beyond which you are no longer responsible?
16. Will the event use pyrotechnics bonfires torches smoke strobe lights or other effects that can have an impact on physical health or limits the teams access to a patient in need.
17. What is the traffic pattern expected and what can you do to bypass it should you need to evacuate quickly.

TABLE 2: Provision of emergency medical care for crowds (modified from ACEP guidelines[10])

COMMAND AND CONTROL STRUCTURE.

Generally speaking and incident management system structure should be applied and all such events. This needs to integrate with the command-and-control structure of the larger event. A communications plan that may include land lines [if available], mobile phones, radio, texting, social media etc. this should also include some backup methodology should all systems fail. At bare minimum all key participants in the healthcare response as well as any administration or other service interfaces with them should have an identifiable and unique way of communicating. For example it two-way radio is used [as the most practical method in large area events] there needs to be a defined frequency to be used internally by each service [police, EMS, management etc.] as well as an overall system-wide frequency listened to by all but that is used in an emergency only. All people on the communication grid need to know the call sign [identifying name] and frequency of all other key players. There also need to be rules about what radio communications are used for so as to avoid obstructive radio chatter. In events that have high ambient noise smartphone technology and text messaging have proven to be a practical and feasible tool.[18]

In the event that paramedics from different EMS organizations are deployed to the site the chain of command needs to be clear with one lead organization only. Ideally deployed EMS should be integrated into the regional EMS system for purposes of mutual aid and support. Furthermore this would allow people attending the event to call for help using the same method they are familiar with [911 call or similar].

EQUIPMENT AND SUPPLIES.

Supplies required at the aid stations will be determined by the nature of anticipated injuries at the definition of task as mentioned above. Note that stations need to be supplied and ready to operate prior to the beginning of the event. Not only this because injuries may occur the need me occur immediately upon opening the event but also because I access to station may be difficult through heavy traffic or crowds. Medication and equipment should never be left unsupervised. Both ACEP and NAEMSP have lists of equipment, supplies and pharmaceuticals for eight stations these are good starting points for defining one's own list based on the analysis of the specific event and the resources available. Obviously the list will be influenced by the strategy and level of care chosen for this event. For example and events where there is an anticipation of violent fans and significant alcohol and drug use the team may require the ability to restrain and sedate patients where as a religious gathering of elderly on routes to Lourdes probably has different requirements. In an event of long duration also needs to be a supply-chain that can restock the aid stations. If this is part of the plan then transportation through the crowd must be considered. There's no point having supplies available that cannot get to the frontline.

LAYOUT OF THE MEDICAL DELIVERY SYSTEM.

Healthcare can be delivered in a variety of venues:
- Mobile units; on foot
- Mobile unit; bicycle
- Mobile unit; motorized [i.e. golf carts]
- Mobile units; ambulance
- Fixed facilities; first aid tent
- Fixed facilities; field hospital.

All units need to be able to communicate between themselves so as to provide mutual aid. This requires a communication plan.

Mobile units need to have defined patrol areas. This requires that all people involved in the health service plan have a common understanding of the geography and identification of locations within the event site. Further, mobile units need to know where to evacuate patients to if the treatment required is beyond their capability.

Mobile units need to have defined areas of responsibility. There must be clear criteria that would define patients that should not be that should be transferred to a higher level of care.

The scope of care plan, communications plan and the site layout should be part of the pre-event briefing. The site layout to make sure should be the same for all services provided the event such that security, infrastructure, healthcare, catering all are working off the same map.

Mobile units are, by their nature, designed to provide quick and simple care or transfer of the patient to a fixed unit. Mobile units should spend minutes, not hours, with patients. Patient required longer here should be transferred to a fixed facility.

Fixed facilities need to be easily identifiable with easy access both by participants and by evacuation vehicles. The area also needs to be protected in the event of a rush towards the exits. The staff and the supplies need to be protected from the elements and controlled substances need to be in a safe location. In planning to fix site is useful to model it on an emergency department as these departments have evolved over time to provide similar care to what may be required at mass gathering.

The location of the aid stations will be determined again by ease of access both for incoming patients and for crews delivering patients or evacuating patients. Furthermore the safety of the station needs to be taken into account. If there's a potential for a crush of people than the station needs to be placed out of the presumptive high-traffic area. That protects the station and also allows it to continue functioning in the event of the stampede.

Once the aid station number and location is been defined all staff [both medical and nonmedical] need to be briefed ahead of time on the medical strategy and need to have maps of the area so that they can identify the nearest appropriate resource in the event of an emergency.

The fixed healthcare facilities need to be up and running before the opening of the event. This will allow staff to familiarize themselves with their own facility and with the environment. Furthermore it is always possible that the first people attending the event may require help. Being set up ahead of time allows the healthcare staff to provide support to the crew setting up the venue while also system-testing their own facility.
Mobile units should be deployed shortly before the opening of the event. Mobile unit staff should be familiar with the location of other units as well as location of the field hospital.

Each event has its own risks and its own geography. These will determine the structure of the medical delivery system. Depending on the nature of the event it may be reasonable to have one central aid station which has more resources and a number of outlying smaller stations that can provide initial care and evacuate to the main station if the need arises. In deciding this a general rule of thumb is that an open environment the participant should be able to present themselves for care after walking no more than five minutes. In a stadium or mobility limited environment this may need to be adapted.

ACCESS TO PATIENTS

Patients subdivide two categories: Those who can come to the aid stations and those who require an outreach to deliver aid to them. The first group are easy to identify as they will present to the caregivers. By definition they will usually be the least sick or least injured when compared to the second group. This is different from patients who are unable to identify themselves to the aid station as these latter patients need to be spotted in the crowd and the aid station needs to identify them and reach out to their location. In order to do this there needs to be some element of patrolling the spectators looking for potential patients. This could also include a component of preventative care such as reminding people to drink or identify people who are pre-syncopal or looking otherwise unwell. Once a patient is identified the roving medical spotter needs to have some method to call for help and identify their location. This could be as basic as a whistle and the flag or as sophisticated as two-way radio communication and GPS coordinates. Generally speaking the lower technology that works the better, as the odds of a whistle malfunctioning are far less than that of a smart phone. The spotters do not need to be part of the medical personnel. This could be part of the training of other staff on-site such as ushers, security personnel etc. Once again communications are critical so that if they identify needs they can call for medical backup.

Ability to transport patients with in the site can range from a shoulder carried canvas stretcher to a golf cart or a small ambulance. Whatever the process, the system needs to be exercised prior to the event itself. Once again the people transporting do not need to be part of the formal medical staff as long as they're trained in fulfilling the task.

The venue and the event will determine the best method. At the Hamilton airshow a patient needed urgent evacuation but was at the center of a crowded airfield which, in turn, was in the midst of a traffic jam. This made it difficult to evacuate the patient by land but, recognizing that this was the ideal location to be evacuated from by air which was made easier by the fact that there were multiple helicopters and fixed wing aircraft on site that was the backup evacuation plan which worked flawlessly.

DOCUMENTATION PLAN.

For every patient seen beyond the most trivial [request for a Band-Aid request for water etc.] a record must be filled out with the patients name, age, address, Vital signs, chief complaint, history, physical exam, treatment and disposition. Consideration should be made for the tracking of communicable disease [particularly in events where participants can be coming from many nations]. Patients who are transiently in the area for purposes of the event should ideally have their local address as well as home contact information identified. If patient is going to be kept in the aid station or transferred between stations when the patient needs to have an attached identifier [such as a wristband] and the documentation needs to be transferable [requiring that a copy stay at the initial station and a copy move with the patient]. Other identifiers that may travel with the patient could include a triage tag [in the event of a mass casualty]. In past events where large evacuations are taking place and it was difficult to transfer information and organize fashion key information can be written on the patient with a waterproof marker is an obvious location such as forehead. Electronic injury surveillance systems have been tested and can provide real-time information on injury and illness patterns[19].

Mobile/trivial encounters do not require the generating of a health record. The keeping of general statistics [number of patients seen, supplies consumed] is adequate. Patients requiring services at the field hospital and who may have trackable illnesses must have a report generated. Ideally data from these encounters should be tracked in real time so as to allow early interventions, particularly in the event of communicable diseases or toxic exposures. This may or may not be possible based on the resources available on-site. At the very least a post hoc review of the care delivered and illness presentations should be performed.

There are a variety of ways to keep health records. If a stable, reliable, cross-platform wireless system is available then records can be maintained electronically and generated from smart phones, tablets or desktop computers. This, however, is rarely the case and in most situations paper records will be the norm. These can be preprinted or generated by computer and printed on-site. If the latter is chosen there need to be a number of preprinted charts available in case of a power failure.

Charts need to include:

- A unique chart number
- patient identifiers
- encounter date
- Encounter time
- Encounter location
- Type of provider
- Reason for encounter [in broad strokes identifying the systems involved]
- Tests and results
- Treatments delivered
- Final diagnosis
- Disposition

In order to minimize data entry time there can be chart numbers that are unique to specific dates and specific locations meaning that staff only need to enter the time of encounter.

There need to be free text areas available for triage staff, for nurses and for physicians.

DATA COLLECTION

A process for data collection is important in order to generate a final report. This is important for future events as well as may become relevant should a disaster occur.

FINANCIAL MANAGEMENT

A plan needs to be in place before the event to remunerate [if the event is paid for] or otherwise reward and thank staff. There also must be a plan to cover the expenses other than staff. These could include supplies and rental of medical equipment.

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