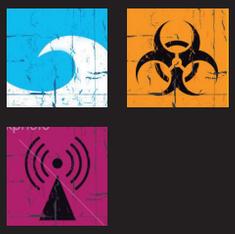

Chapter 8

Preparing for Mass Gatherings

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Preface

The structure, organization, and management of medical services for large events are a vast and evolving field. Over the past decade, a host of reports, guidelines, and articles have been published on this topic. This chapter does not seek to repeat that extensive body of work. Rather, we propose a basic framework from which to approach the organization of medical services at large gatherings. This framework, which follows a W5 approach, considers in turn the what? (types and levels of health services), who? (health services providers at large gatherings), where? (points of care), when (planning, deployment, and wrap up), and how? (essential supports) of necessary and appropriate medical services planning at large gatherings.

To illustrate the concepts proposed in this chapter, examples are drawn from the organization and implementation of medical services for World Youth Day 2002 (WYD2002), a 6-day event that included a number of large gatherings ranging from 250,000 to 850,000 participants in Toronto, Canada, in July 2002.

Many of the sections of this chapter, in fact, deserve an entire chapter of their own. This discussion can thus be considered 1 of many building blocks toward developing the tools and strategies that will enable and preserve the safety and well-being of people as they come together in large numbers. While the backdrops of these gatherings have and will continue to span a wide range of circumstances, locations and spirits, the provision of quality medical services to the participants of large gatherings acknowledges what they all share, namely the draw of humanity to come together.

I wish to thank for their support, insight, and expertise the Canadian Conference of Catholic Bishops and the leadership of WYD 2002, St-Michael's Hospital, Toronto EMS, Toronto Public Health, Dr. Dan Cass, and the members of the WYD 2002 Health Committee (Mr. Robert Burgess, Mr. Walter Chandon, Dr. Bonnie Henry, Dr. Doug MacPherson, and Mr. Ric Rangel-Bron).

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Organization of Medical Services for Large Gatherings

For the purpose of this chapter, a mass gathering (also called a large gathering) refers to "the temporary collection of at least 25,000 individuals at one site or location for a common purpose."[1,2] Mass gatherings encompass a wide variety of events including indoor and outdoor functions, concerts, sports, and religious gatherings. These may last anywhere from 1 hour to several days or even weeks. Each type of event draws a particular crowd with its own demographic composition and behavior pattern. Consequently, large gatherings present various levels of risk and various ranges of morbidity and mortality patterns. Because of this wide range of factors, planning medical services for a large gathering can be challenging.

In this chapter, we consider in turn 5 of the key elements of a health services plan (HSP) for large gatherings. These include the following:

1. What: the scope of services
2. Who: the types and number of healthcare staff required
3. Where: the number and types of facilities required
4. When: the timing of planning, preparation, staging, care delivery, and wrap up
5. How: key enabling support services described as "the 3 C's" (collaboration/partnerships, command and control, and communication)

Some issues raised below have been more fully addressed in other chapters of this book and are mentioned here for the sake of completeness.

In addition to the relevant literature, the information presented below draws largely from the planning and delivery of medical services during WYD2002. WYD

2002 took place over a 6-day time frame in Toronto during the month of July 2002. It involved spiritual and cultural activities aimed at youth aged 16 to 35.

Most of the activities of WYD2002 were held in 2 large venues. The first 4 days included conferences, cultural and spiritual events held at Exhibition Place, a large fair ground in downtown Toronto. During the weekend portion of the event, an estimated 750,000 participants gathered at Downsview Park, a former military airport located north of the city centre, where activities spanned 34 hours. Participants started the day with a 5 to 7 kilometers pilgrimage walk to Downsview Park, trickling into the venue from early morning to early afternoon. Various spiritual and cultural events were presented throughout the day and culminated in a youth Vigil hosted by Pope John Paul II. Participants then stayed on-site overnight, sleeping outside. On Sunday morning, the crowd swelled to 850,000 as the general public joined the youth for a Papal Mass presided by the Holy Father.

The Bigger Picture and Key Preliminary Steps

It is a fact that mass gatherings, as significant as they are to their organizers and participants, occur in a much broader social, economic, and civic context and may not bear the same relevance to other potential stakeholders. In the case of WYD 2002, for example, although many saw the Pope's visit as a significant spiritual and cultural highlight for the City of Toronto and indeed for Canada, many others focused primarily on the burden and chaos resulting from having such a large influx of visitors and dignitaries to the city in a short period of time. Given the wide ranging impacts of such events, the very first task in planning for medical services for such large gatherings is to clarify the goals of the HSP.* This seemingly obvious first step is actually far more complex than might initially appear. One of the challenges facing those responsible for the planning and provision of medical services at large gatherings is that their portfolio is rarely the focus of the event. In fact, although this is becoming less common, in many cases, medical services are an afterthought. The implication here is that those organizing the event itself might not recognize the logistical, clinical, ethical, and organizational implications inherent in the planning and delivery of medical care to such large groups.

Step 1

Before the details of the medical services plan are developed, it is suggested that a preliminary plan including the following elements be drafted and approved by ALL the key stakeholders.

1. Develop or identify a clear governance structure and paths of accountability

*"Medical services" and "medical care" refer to the delivery of clinical care to individual patients while "health services" is a broader term, which includes preventive as well as complementary health services. In this document, because we consider both public health (surveillance planning) as well as the planning of clinical services, we use medical services, medical care, and health services interchangeably.

2. Develop or identify clear principles, goals, and objectives for the event's medical services program
3. Develop a preliminary budget and clearly identify funding sources
4. Ensure that the above elements receive approval from the event's leadership

Once these key preliminary steps have been completed and agreed upon, those in charge of the planning and delivery of medical care for the event can proceed to the development of the detailed HSP.

What: Types and Levels of Health Services

From First Aid to Full Resuscitation

Early in the planning process, a decision will need to be made regarding the types and levels of care to be provided on-site to event participants. These levels of care can be divided into the following:

- Prehospital services: first aid and paramedic services
- On-site (field) hospital services: minor, intermediate, and acute care/resuscitation
- Complementary health services such as massage, acupuncture, and so on

In determining the types and levels of services, it is useful to use existing services available to the general population in ordinary times as a benchmark. Once the "existing baseline" level of services is clearly identified, the medical services team can decide how the event's medical services will compare to the level of services that is usually available.

Keypoint: In the case of WYD 2002, 1 of the key principles that informed the medical services plan was "to provide participants with a level of medical services comparable to that available to the general population at local emergency rooms."

This principle includes 3 key elements. First, it obviates the need to use vague terms such as "basic" or "primary" services that are commonly used to describe the scope of health services at large gatherings. Second, it conveys the ethical imperative to provide participants (and citizens NOT participating in the event) the same level of care as would reasonably be expected by any local resident or visitor. Third, it reflects 1 of the basic tenets of health services planning for large gatherings, namely to change as little as possible to the way in which medical services are usually delivered locally. That is to say that optimally functional HSP for large gatherings ideally use the existing expertise and systems already in place. A large gathering is not the time to try to reinvent the healthcare wheel, especially in the Canadian context where emergency medical services are delivered according to the highest of standards. In unknown circumstances, people (healthcare providers included) typically function best when they perform the tasks they know, in an environment they recognize. Clearly, by definition, a medical services plan for a large gathering will present new and unexpected elements. This does not negate but rather enhances the need to keep as much of the elements of the plan as familiar as possible to those who will need to deliver the care.

Once a decision has been made to provide participants with a level of care comparable to that generally available locally, factors such as crowd size, ease of egress (itself related to crowd density, the layout of the venue, access to transportation, etc.), and the proximity of tertiary care facilities will help further determine what specific services actually need to be provided on-site. The type of activities featured during the event and the demographic and behavior profile of the participants will also inform the type of services that should be provided. In the case of WYD2002, for example, previous Papal events had demonstrated that participants tended to delay seeking medical assistance to stay on-site. Many in fact refused to leave the site to seek medical attention having waited long period of time to ensure that they would see the Holy Father. In addition, the crowd size was expected to be above 500,000 for a number of the week's events, especially those held at Downsview Park. The size of the crowd, the limited number of access routes into and out of the site, and the reluctance of individuals to leave the site informed the decision to include a full range of medical services, including resuscitation at Exhibition Place and Downsview Park. This was further supported by the fact that the event took place in July when the emergency rooms of the Greater Toronto Area (GTA) are typically overcrowded.

Keypoint: *The decision to offer a full range of emergency services on-site during WYD 2002 was based on a goal to optimize care for the participants and maintain existing Canadian standards of care while minimizing the impact of the event on existing services*.

However, the commitment to treat most participants on-site was carefully balanced with a decision to ensure prompt transportation of the patients to local hospitals for those likely to require more than a few hours of care.

Beyond medical care

In addition to determining the level of clinical care required/expected at any 1 gathering, a number of important health-related services should be included in the planning. These services play a key role in mitigating the health risks of large gatherings. We classify them here as surveillance, safety, and security.

Surveillance

Surveillance is extensively discussed in another chapter. For our purpose, suffice it to say that a clear surveillance plan should always be included in the planning and implementation of a HSP for a large gathering. For international events, this should include international surveillance as well as the monitoring of local sentinel sources. In addition to the local public health authorities who may identify conditions subject to mandatory reporting, other sentinel sources can include local emergency rooms, family physician offices, and pharmacies to tract the sale of over-the-counter preparations for conditions such as diarrhea and fever, for example. In addition, a surveillance system designed specifically to pick up surge incidences in presenting complaints at on-site facilities can play a crucial role in identifying a source of infection or trauma in a timely manner. An effective and efficient surveillance system enhances the ability of the event's health services system to respond in a timely manner. This enhanced responsiveness is particularly important given the many unknown factors affecting morbidity rates and patterns at large gatherings.

Safety

Optimizing the safety of the site is the key to minimizing the demands on the event's medical services. Water and weather mitigation deserve particular attention. The sale of drinking water is frequently used as a revenue-generating tool in large gatherings. It is worth noting that even at low cost, selling water decreases the access and increases the risk of dehydration with potentially disastrous consequences on the patient presentation rate (PPR). An integrated water strategy should be developed for all large gatherings. This includes having a sufficient supply of water, which is both available and accessible (low or no cost) as well as an effective communication strategy to inform and encourage participants on how to remain well hydrated. In addition to drinking water, some large gatherings benefit from a strategy to mitigate weather conditions. In hot climates, water sprinklers and shaded areas can go a long way toward minimizing the harsh effects of the sun. In cold and wet weather, shelter and protective blankets can be equally beneficial. Planning for the impact of weather in outdoor events is well worth the effort.

Optimization of the site, venue, and terrain is another key aspect of the safety plan that has a direct impact on the PPR. So-called smart stadiums that can accommodate large and varying flows of people and well as intelligent landscaping for outdoor venues can go a long way toward minimizing injuries such as limb trauma and crush injuries.

> At the end of World Youth Day in Denver in 1993, egress from the site of the final Mass was delayed due to a bottleneck effect at the venue's exit. Participants were tired and dehydrated, having stood in the sun for several hours during the final Mass. The crowd congestion which developed at the end of the Mass resulted in a high incidence of symptomatic dehydration and prompted the organizers to call in the National Guard for the administration of intravenous rehydration to thousands of people.[3]

In addition to illustrating the impact of site design and event programming on the casualty rate, this incident also points to the importance of contingency planning to respond to surge demand during large gatherings. This issue is further discussed later.

Security

Security at large gatherings is a complex issue and is discussed in detail in the chapter on scene safety. We mention it here to highlight the fact that security and medical services are intimately linked and should ideally be planned in concert. One of the most obvious impacts of security on medical services is to secure access to medical facilities for participants and to secure unencumbered egress for those who need to be promptly evacuated from the site. Another aspect is the protection of the healthcare facility and personnel.

Surveillance, safety, and security have direct and potentially major impacts on the demand for health services at large gathering. Individuals responsible for each of these elements should be identified early in the planning process and planning efforts should be coordinated.

Who: Health Services Providers at Large Gatherings

Once the types of services to be included in the HSP have been identified, the HSP should outline the types and numbers of healthcare providers needed to deliver them. We will focus this part of the discussion on those providing the clinical services and will not discuss those responsible for public health, surveillance, safety, and security.

We identified earlier 2 broad categories of medical services at large gatherings, namely prehospital care and field-hospital care. As mentioned, wherever possible, each of these levels of services should be provided by individuals who are experienced in doing so. In addition to the healthcare providers mentioned below, we should note that a properly functioning field hospital facility will require staff for nonclinical activities such as registering patients, translating, cleaning, and restocking. The number and tasks assigned to nonclinical staff varies greatly depending on the type, length, and site of the event. We will not be discussing this in detail here except to recommend that plans be made to recruit nonclinical staff in numbers proportional to the expected PPR and in keeping with the size of the health facility.

The Elusive Calculation of Predicted PPR

In 1997, De Lorenzo[4] demonstrated that the prediction of casualty rates, now commonly called the PPR, could NOT be based on the size of the crowd alone. Since then, a number of authors have proposed more or less complex formulae to calculate the PPR. Much work still needs to be done on this key step in the planning of medical services for large gatherings. From the standpoint of accountability, it is important that those responsible for the planning of health services for large gathering make use of as much information as possible, both published and unpublished where accessible, in predicting the PPR. Regardless of the formulae or method used to predict a PPR on which to base the HSP, it is recommended that organizers clearly report on how they came to their decision and include in their plan a contingency element to respond to unexpected surges up to double their predicted PPR. Factors such as weather (temperature, humidity, and precipitation), crowd size, crowd density, type of venue, crowd mobility, age of the participants, the prevalence of drug and alcohol use, and the type of activities of the crowd (spectator, religious, and ambulating) have been found to influence the PPR.

First Aid Providers

Most, if not all, HSPs for large gatherings will include first aid providers. Although the delivery of first aid is often mistakenly assumed to be so basic as to require little formal training, the effectiveness of first aid is in fact greatly enhanced when it is delivered by a properly trained and experienced individual. In addition to the actual delivery of care, experience in working in diverse settings and in dealing with the public can significantly enhance the capacity of the event's medical system to respond to the health services demand. Experience in triage and communication through existing channels of command is also extremely valuable in the context of large gatherings. For this reason, clearly identifying

an experienced agency to coordinate the delivery of first aid is recommended. In some instances, the size of the event might require the collaboration of several existing first aid organizations in which case clearly identifying the lead agency is important.

Paramedics

The scope of practice of paramedics varies greatly among countries, regions, and jurisdictions. Furthermore, a single organization can include paramedics of different levels of training and scopes of practice. In terms of their scope of practice, expertise, and professional organization, paramedics are invaluable resources during large gatherings. In the Canadian context, they typically constitute the professional group best adapted to the variable conditions of prehospital care at large events. In addition to their clinical scopes of practice per se, the command and control system used by paramedics is well adapted to respond to health services demands during mass gatherings.

The involvement of paramedics in the delivery of care during large gatherings can be organized in a number of ways. In some jurisdiction, the event organizers (and/or the medical services leadership) can hire paramedics to provide care. In this situation, it is important to clearly outline command and control as well as reporting lines both among the various groups of health services providers as well as between the health services providers and other event programs. The fact that optimal coordination is pivotal to the success of healthcare delivery in large gatherings cannot be overstated.

More commonly, paramedics employed by a municipality will be called upon to assist with the provision of care for an event taking place in their area. In large enough events, a number of EMS organizations may be called upon to collaborate. In this case, a lead organization needs to be clearly identified and there again, reporting lines need to be clearly established. In some large gatherings, if the casualty rate is not expected to be high, the involvement of the local EMS services might simply require a few additional crews to be deployed according to the usual organizational practices. In large Canadian cities, Emergency Medical Services commonly have policies that dictate how many crews need to be stationed and deployed for crowds of any given size. In larger events, however, EMS organizations might opt to create a quasi-parallel fleet of crews dedicated exclusively to the event. The term "quasi-parallel" is used here because the 2 groups are rarely completely separate. Should a major incident occur outside of the event but during that same event, a good EMS system would be able to redeploy crews away from the event to where they are needed the most in their territory or vice versa. As said, the establishment of an event-focused paramedic fleet with a dispatch service integrated into the broader local dispatch system provides optimal coordination when events span several hours/days and occur over large geographical areas (e.g., WYD and Olympic Games). For more information on event command and control, please see the chapter on Incident Management Systems.

Keypoint: *In the case of WYD 2002, a large number of paramedic crews were assigned to the event. Crews included Level 1, 2, and 3 paramedics, each with increasing levels of skills and broader scopes of practice. Dispatch for the event was integrated with the city dispatch system, such that a request for EMS assistance was triggered by a 911 call whether the call was placed from a WYD 2002 venue or from the rest of the city. This capitalized on the principle highlighted earlier, which sought to maintain existing practices during the event. Calls placed to EMS were received at*

central dispatch. The operators quickly identified whether the call was coming from a WYD 2002 venue or not and dispatched the appropriate crew accordingly.

The presence of EMS crews with increasing level of expertise is also very useful in providing some expandability to the health services system.

> On the second-to-last day of WYD2002, as 850,000 people spent 34 hours in a field for two separate events, the triage area of the main field hospital at Downsview Park was congested by the high volumes of people presenting with heat stroke and dehydration. The observation area of the main field hospital was congested with patients who monopolized a great deal of nursing resources as they received intravenous or oral rehydration while remaining clinically stable. To address this patient flow issue two strategies involving the redeployment of paramedics were implemented. First, paramedics were posted outside the entrance of the hospital to screen, assess and treat the minor problems in patients who were presenting to the main field hospital. This diverted minor health problems away from the limited resources of the field hospitals. Secondly, level 3 paramedics were deployed inside the main hospital, in the overflow area, where they monitored intravenous rehydration of hundred of patients under the supervision of the lead physician of the Base Hospital. This strategy freed both nurses and physicians to attend to other, less stable patients.[5]

Field Hospital Services

In keeping with our recommendation to plan health services for large gatherings in a manner that maintains existing practices as much as possible, we recommend to have both nurses and physicians to staff field hospitals.

Nurses

Like many other healthcare practitioners, nurses have wide scopes of practice depending on their training, regulation, and area of experience. They constitute the backbone of a responsive field hospital system as they provide the bulk of the care and have a key role in both triage and reassessment. Our recommendation is to select emergency room nurses to work at large gatherings whenever possible. Primary care nurses who are accustomed to seeing a wide range of undifferentiated presenting complaints can also be a significant asset to staff the low acuity area of the field hospital. Furthermore, whenever possible, hiring nurses who are used to working together provide added efficiency and may also enhance quality.

Physicians

Although some authors have questioned the need for physicians to be present on-site during large gatherings, others have demonstrated that physicians can improve triage decision and affect transportation rates at mass gatherings.[6] In certain venues and with certain types of events, the presence of a physician on-site might not be essential, especially if there is good access to emergency response with easy evacuation in the case of an acute cardiorespiratory event. In the case of very large gatherings, occurring over long period of time, or with a high predicted casualty rate, having a physician on-site ensures prompt medical attention while minimizing the impact of the event on neighboring emergency departments.

Here again our recommendation is to staff the field hospital with physicians experienced in emergency medicine. At the very least, a generalist physician with experience in treating a broad range of medical problems will be most effective in responding to a variety of presenting complaints. A pitfall to avoid here is to schedule physicians based on their political or social profile. In the context of large gatherings, the climate is often ripe to offer positions as a matter of courtesy, based on some professional hierarchy. It is equally important to remember that first and foremost, the physicians involved need to be hard working, adaptable, good problem solvers, good team players, and, mostly, competent in dealing with a wide range of medical issues. The role of the subspecialist is debatable in providing care at large gathering. With limited space, largely undifferentiated presenting problems mostly minor and intermediate degrees of acuity, only specialists who have the skills to respond to a wide variety of presenting problems should be considered.

The presence of residents (or physicians in training) at large gatherings can offer a rich learning opportunity for trainees in emergency or family medicine while providing an extra pair of hands, provided the trainees are advanced enough in their training to offer a good level of service without drawing excessively on the supervising attention of the staff.

Training and Orientation

Regardless of the types and number of healthcare staff recruited to provide health services during a large gathering, the provision of adequate orientation and training, including a manual with key information, can greatly enhance the performance (and satisfaction) of the staff. The chaos inherent to the unfamiliarity of the settings, the varying flux of patients, and the new physical surroundings are challenging for healthcare staff working at large gatherings. Because the demands posed on healthcare staff are already significant, organizers will often refrain from mandating training and orientation for fear of overburdening the staff. In actual fact, an effective training session or at the very least, an introduction to the team and to the physical space will go a long way toward mitigating the challenging conditions of the event itself and will ultimately result in better care and greater staff satisfaction. Providing information to the healthcare staff about reporting and command and control is also essential, because despite best efforts to avoid this, it is likely that staff will be working together for the first time.

Staff Care

Other issues that are often overlooked in organizing health services for large gathering is staff coordination, deployment, and care. Where space permits, having a room dedicated to the healthcare staff, where they can rest and decompress away from the patient area, is important. It contributes to maintaining the energy and the morale of staff under challenging conditions. Showers and cots should be available where possible. Staff meal distribution or access to food outlets as well as transportation to and from the field hospital should also be considered. In large gatherings, access to the site is often limited and credentialing is required weeks prior to the event. Having a clear plan to

stage healthcare staff, distribute ID badges, and then transport them to and from their respective "posts" should be considered. Letting staff know who to go to in case of difficulty is also important.

Paid Staff Versus Volunteer

The decision to have paid or volunteer staff is typically taken by the leadership of the event itself, not by the medical leadership. Identifying the source (or sources) of funding for medical services and obtaining approval for that portion of the event should occur very early in the planning process. It is a fact that many events rely on volunteers to provide a variety of services, including health services. The use of volunteers is not only seen as a cost cutting measure, but in many instances, getting "members of the local community" involved in an event is seen as a way to enhance participation and buy in. In the current context of security awareness and health consumer expectations, the exclusive use of volunteers, particularly volunteers who may not have the exact skill profile required to fulfill the medical services plan, is falling out of favor.

One cannot overstate the positive contribution of a healthcare staff who is well equipped to address the challenges inherent to large gatherings. For that reason, we recommend that a clear and sufficient portion of the budget of large gatherings be dedicated to the provision of health services including the remuneration of healthcare staff. At the very least, a cadre of reliable and knowledgeable staff should be paid, even if certain less-skilled tasks can be assigned to well-trained and reliable volunteers. In the case of first aid agencies, the individuals providing the care often do so on a volunteer basis, but the organization itself requires funds to function. Their contribution should be remunerated. Paramedics belonging to EMS organizations are typically remunerated for their work that is regulated by clear labor agreements. These should be taken into consideration by all members of the health services planning leadership. Nurses and physicians likewise should be remunerated. By their very nature, large gatherings can be associated with chaotic circumstances that present significant challenges to the provision of health services. While there are numerous examples of volunteer nurses and physicians rising to the occasion in the face of dire practice circumstances, it is far easier to maintain leadership and direction over a group of healthcare professionals when they are being fairly compensated for their hard work. And given that unpredictability is among the main threats to the effective provision of health services during large gatherings, any measure that can contribute some predictability and lend weight to the medical leadership and direction is worth considering.

It should be further noted that in some jurisdiction, insurance coverage for nurses is related to whether they are volunteering or being paid and to the location and context of their practice. Health services planers for large gatherings should understand and, where needed, obtain adequate insurance coverage for all healthcare staff early in the process.

Numbers

An estimation of the number of first aid providers and of paramedics is best left to the organizations that locally coordinate these activities. They possess the data and experience to gage the needs of a given event and are best positioned to estimate the needs. Once the entire health staff plan is drawn, the medical

director of the event should ensure that the proposed numbers of providers for first aid, paramedics, and field hospitals are congruent with the overall plan and PPR and that no 1 group ends up shouldering a disproportionate amount of work.

With respect to the numbers of nurses and physicians required at large gatherings, the literature offers a wide range of suggestions. We recommend beginning with a rough estimate of the PPR. On the basis on that number and assuming that 10%–20% of presentations will be serious enough to require observation, the number of beds and chairs needed can then be estimated. Next, the location and distribution of these beds and chairs should be determined based on the physical configuration of the site. Once the number of field hospitals and the intermediate and acute beds needed in each field hospital have been estimated, the number of staff required can be calculated based on the staffing ratio of large local emergency rooms. This again reflects our principle to maintain the existing standard of care for the event's participants.

Keypoint: *In the case of WYD 2002, for example, we based our calculations on the staffing standards of the emergency room at St-Michael's Hospital in Toronto. We used varying nurse-to-bed ratios in the minor, intermediate, and acute areas, adjusted shifts according to the expected peak times and built in a buffer of a few additional nurses per shift to account for the "unknown." We further tried to schedule at least 2 physicians per field hospitals, including the smaller ones, to ensure that the physicians were never "alone."*

In addition to this coarse "formula," the following general factors should be considered in planning for the numbers of nurses and physicians:

1. PPR and acuity rate: The higher the casualty rate, the more staff you need to assess and treat. Although a high PPR by itself may well be addressed by nonphysicians (80% of presentations will likely be minor or intermediate), a higher acuity rate would benefit from the presence of more physicians. A very high acuity rate, one likely to overwhelm the field hospital system, would dictate a need for more paramedics to transport patient's off-site.
2. Ease of access to the site: If there is a chance that access to the field hospitals might be limited by crowd density at some point during the event, especially in an event that is predicted to last over 6 hours, additional staff should be scheduled for each shift to avoid burn out and attrition should the next crew be delayed.
3. Inefficiency (Cushion) factor: It is assumed that health professionals working in a new environment with new colleagues and new equipment will be less efficient than in their habitual environment. Although we recommend that the planners of medical services make every effort to create work conditions that resemble the staff typical environment as closely as possible, we recognize that despite the best efforts, field hospitals will constitute a new environment. That novelty, along with the energy and chaos generated by the event itself, is likely to decrease the efficiency of the staff. We therefore recommend that an additional 2–4 nurses be added to each shift when possible. Some planners may consider the nurse assigned to one-on-one nursing for the acute beds to constitute 1 of those contingency nurses as the likelihood of having patient in the acute beds for prolonged period of time is small. It is expected that should

a patient require acute care or resuscitation, they would be stabilized and then transferred to a hospital.

Contingency

In addition to the "inefficiency factor" described earlier, the planning of health services for large gatherings should include a contingency plan for the rapid expansion of staff and space in the event of a surge in the demand (see contingency below). Contingency planning is challenging on a number of levels. A very large surge in demand should activate the incident management response (see IMS Chapter) in which case the command and control of the event as well as the deployment of staff and resources would be taken over by the appropriate incident management lead. The challenge comes when demands exceed the planned resources but not in such a dramatic way as to trigger the incident management system. In its most simple formulation, a contingency plan should include a strategy to quickly increase the number of healthcare providers on-site in the event of a surge.

Recruitment

Once we have established the types of services to be provided on-site and the types and numbers of staff needed to deliver them, a number of strategies can be used to recruit staff. Some agencies that specialize in recruiting emergency room personnel might be able to recruit staff for large gatherings provided the budget allows for such a process. Other events have used general volunteer registration to identify healthcare professionals who then get scheduled to a field hospital. As discussed earlier, this is the least efficient way to plan for healthcare personnel for large gatherings. One method that has been used with success is to partner with emergency departments located in relative proximity to the event and get them to second entire healthcare teams to the event for any number of shifts. Partnering with a given emergency department to staff one or several shifts offers two advantages. First, it allows a given emergency department, which may be otherwise overrun with event participants, an opportunity to meet the demand for health services on-site without engaging the additional resources involved in using its own facility. Second, it fosters the collaboration of healthcare providers who know each other and ideally who may have worked together previously.

Keypoint: *In the case of WYD 2002, emergency departments in over 10 hospitals in the GTA provided teams of physicians, nurses, x-ray technicians, and other nonclinical personnel to staff the WYD 2002 field hospitals. Emergency departments registered for the number of shifts they were able to fill. In some cases, additional staff from the general volunteer database needed to be added to these teams, but a solid core of healthcare professionals who were used to working together provided a safe and effective team to integrate others.*

Where: Points of Care

Once the types and scopes of services and the staffing detailed have been determined, the location of service delivery can be considered. In actual fact, the issue of location can and often does arise prior to all the others depending

on the configuration of the site. Decisions regarding the location of points of care can be divided into two broad issues namely the number and types of mobile prehospital healthcare units (first aid foot patrols, bike and/or golf cart paramedics, and so on) and the number, size, and location of the field stations and hospitals.

Mobile Units

By mobile units, we refer here to one or a pair of health providers, typically with a prehospital scope of practice, who circulate over a defined geographic area of the event site to provide health services as close to the location of the "patient" as possible. Mobile units typically circulate on foot, on bicycles, or in golf carts. Some mobile units are "stationed" and mobilize only in response to a dispatch call, whereas others roam the site, ready to respond to health issues as they encounter them. To function optimally, mobile units need to be closely integrated with the rest of the event's health services. This should include a clear and streamlined communication system for command and control and a plan for escalating services from first aid to prehospital paramedic care to on-site transportation to a field hospital and lastly, if needed, off-site transfer. It is also important for roaming teams to have a clear shift schedule as well as a physical home base where providers can return to top up supplies, get hydrated, report in to the leadership, and rest. Similarly, a clear area for staging and deployment of the mobile units is key and should be taken into consideration when planning the space requirement for health services at a large gathering.

Fixed Facilities

In addition to mobile units, the delivery of health services at large gathering will require a number, and often of a variety of fixed points of care. These can range from a small, preferably shaded or sheltered area, such as a canopy and a few chairs, to a stationed mobile unit (a truck or a van); to a tent, mobile home or reassigned container; to a reassigned permanent building (in part or in its entirety); to the building of a new and dedicated structure. All of these can assume a wide range of dimensions and levels of sophistication.

The size and location of the facilities should be planned based on the expected PPR and the expected flow of the crowd over the course of the event. Access is paramount to the value of medical facilities during large events and a significant element of this access is adequate signage and the ability for participants to locate the facility easily.

In large outdoor events held over a large venue, thought should be given to establishing health stations close to each entry point into the site. Similarly, when large crowds are expected to cover a large geographical area, such as during large concerts for example, positioning smaller health stations infield, in the middle of the crowd but close to access paths, will greatly improve access to health services for participants. Conversely, such a disposition will also allow for greater access to sick participants by mobile teams stationed at those health stations. Larger facilities with more sophisticated levels of care are typically best located at the periphery of the site where off-site transport can be easily achieved if needed.

The number of each type of health facilities should be a function of the configuration of the venue and of the type of event, including the expected

flow of crowds. Events *that* involve highly mobile crowds over large areas will obviously require more points of care, whereas a stadium in which crowds are sitting for most of the event may not require more than *1* point of care. (Although organizers of large gatherings taking place in stadiums should plan for surge contingency in the event of a structural collapse or stampede phenomenon as these have been shown to occur with some frequency at some sports events, for example.)

Content: Equipment and Supplies

The equipment and supplies required at various health services delivery points are a direct function of their purpose in the overall HSP of the event.

First Aid Stations

Facilities dedicated to first aid do not require much in terms of structure and equipment. Shade provided by a tarp or a canopy of some type, seating, and in some cases a cot or two are all that is required. Basic supplies such as band-aids, water, and a few other first aid supplies should be available. Some would argue that making first aid stations too elaborate (and inviting) can result in congestion and overuse from individuals who do not necessarily need attention, but welcome the comfort of respite in the midst of the challenges presented by large crowds. The goal of the facility should be to deliver the right level of care and either discharge the patient promptly (minutes, not hours) or transfer to the next level of care.

Health Stations

Between the basic setting of the first aid station and the fully equipped field hospital, large gatherings can benefit from the intermediate comfort and sophistication of health stations. These can be equipped to provide care for slightly longer period of time (such as that required for oral rehydration or for analgesic to take effect in the case of a sprain or a headache, for example). They correspond roughly to the scope of practice of paramedics and nurses. This level of facilities can be particularly useful infield to enhance access to care for participants who are not motivated to seek medical attention in a more remote field hospital. When a health station is positioned in the middle of a crowd, steps should be taken to ensure that the staff is safe, well equipped, and well protected from the elements.

Field Hospitals

By field hospital, we refer here to a facility equipped to function as a Canadian emergency room. The vocation of the field hospital will vary according to the event, the crowd, the venue, and the length of the event. Regardless of these factors, as discussed earlier, the role of the field hospital is to treat as many of the participants on-site as can safely be achieved without delaying the off-site transfer of patients to definitive hospital care when needed.

The issue of how to handle unstable conditions should factor into the determination of the field hospital configuration. For some large gatherings, the event parameters are such that a paramedic response and immediate evacuation are most appropriate. This is particularly true of events where access and egress

to and from the site are not likely to be compromised and where the volume of medical complaints is low. In such circumstances, having a designated paramedic crew to transport patients off-site can be most efficient. *However, i*n other events, the very large crowd, challenging access to and throughout the site and high levels of casualty rates strongly favor the inclusion of resuscitation beds in the field hospitals. Furthermore, once the decision to have resuscitation capacity on-site is made, plans for uniform access to such services throughout the site should be made.

In keeping with our recommendation to recreate as faithfully as possible practice settings *that* are familiar and effective for the staff, we recommend that field hospitals be planned and set up essentially like an emergency room. One of the reasons for this is that much thought has been invested in the design of emergency rooms over of the past decades. Issues like patient flow, nursing assignments, monitoring, and logistical issues such as the storage of medications and supplies are complex. Using a functioning unit as a model provides a useful starting point for the planning process.

When: Planning, Deployment, and Wrap Up

The issue of timing in the planning, roll out, and wrap up of health services at large gatherings is subject to a delicate balance between the need to provide services in a timely manner while not wasting precious resource on a premature deployment.

Planning

The planning process for health services for large gathering should be initiated at least a year prior to the event. In addition to the development of the actual HSP, the relationships that are so crucial to the efficient delivery of health services require time to develop and reach maturity. Well beyond the content of the plan, those relationships have the potential to make or break the HSP. Allowing ample time for all stakeholders to come together and reach an optimal level of collaboration is worth the effort.

Deployment

Although some venues, such as stadiums, may have a designated health services area, many large gatherings will rely on temporary healthcare facilities that need to be put in place specifically for the event. Health facilities should be set up early enough to be functional when the first participant arrives. In some cases, opening up the facilities in advance of the event, albeit in a reduced capacity, allows the staff time to get familiar with their new environment. Early setup can also allow for the provision of care to crew setting up the larger venue and provides an opportunity for training and orientation.

Wrap Up

The HSP should clearly spell out the end of each shift, the time at which new patients will be allowed to register, and the time at which patients still on the

premises will be to be either discharged or transported to a local hospital. This information further needs to be clearly communicated to the event's organizer to avoid any undue expectations from participants who may present to the facilities after they are closed. Likewise, plans need to be made for the dismantling of the health facilities at the end of the event. Health facilities will typically stay open for services for some time after the end of the event to respond to the demand of participants on their way out of the venue. A clear plan will allow the medical leadership to ensure that the staff remain on-site as long as they are needed.

How: Essential Supports

Successful delivery of health services during large gatherings does not only rest on the availability of the right mix and numbers of healthcare staff and facilities. Equally important are the ancillary or support elements that should be optimally integrated into the planning, delivery, evaluation, and reporting phases of the event. We review 3 of these key elements as follows:

Collaboration (Optimal Partnerships)

As is true for all effective healthcare delivery, the provision of quality health services during large gatherings is best achieved through collaboration among knowledgeable and committed partners. As mentioned earlier, it is essential that key partners and stake holders be identified and included at the very onset of the planning process. Under clear and consensual leadership (a goal that admittedly can be difficult to achieve in high-profile events), allowing expert partners to contribute their knowledge and skills to the overall plan and delivery model is likely to provide added value and quality to the end product. In other words, "allowing people to do what they know how to do" is most likely to result in a HSP that achieves the desired standards of quality. Implied in this principle is the need for a leadership that is both able to identify key collaborators and is effective in bringing the various players around a common vision. To this effect, identifying the right key individuals in each partner organization is also important. In the organization of health services for large gatherings as for most projects, large and small, success is far more dependant on *who* collaborates than on *what* collaborators do.

Coordination (Command and Control)

Related to the element of collaboration is the importance of clearly identifying an overall command and control. By definition, the command and control function is not consultative. Consultation is best sought in the planning stages, prior to the event. Regardless of people's input throughout the planning process, once the event begins, it is important that those responsible for command and control be clearly identified and recognized as the authority should there be a surge of demand on health services. Ideally, the overall command and control for the event should have a clear and direct communication with a single individual responsible for the overall health services on-site. In very large events, two health services leads will be required; one located with the Command and Control team, potentially off-site, and one on-site. It bears mentioning that the best laid

out plans can quickly become obsolete if clear Command and Control is not established and endorsed well in advance of the event.

Communication

Communication around large events is both complex and crucial. We focus here on communication related specifically to the delivery of health services.

A. Event-wide communication

B. Health services-related communication

Event-Wide Communication:

At the level of the event as a whole, the internal communication strategy (communication aimed at those working for the event) should include a clear algorithm outlining the flow of information from the event's highest leadership all the way to those delivering care and from those delivering care, up to the event's leadership. The respective roles of the event's leadership, Command and Control, and of the health services leads can vary among events. Those roles and protocols for communicating from one level of the organization to another should ideally parallel lines of authority. These need to be well laid out and broadly communicated. The details of effective Command and Control are reviewed in a separate chapter. Suffice it to say here that they deserve careful attention.

Event-wide communication aimed at the participants should include proper signage. Clearly identifying points of care and points of access to drinking water are keys to insuring adequate access to health services. Without proper signage, even the most sophisticated HSP may fall short of its goals. Health-related signage is most effective when it is part of a wider communication strategy for event's participants. In addition to signage, a communication strategy for participants may include other health-related messages such as information regarding expected weather, the need for sun protection, hydration, and appropriate clothing, for example.

Health Services Communication

Communication related to the delivery of health services can be divided into the following:

i. Information and logistical support

ii. Health records and surveillance tools

Communication intended for information and logistical support of the healthcare staff may include the live communication plan (radio frequencies and communication algorithm) and the health services orientation material that outlines a list of equipment, available drugs and dosages, the communication algorithm, and other information pertinent to the effective delivery of care.

Health records may include a number of formats and versions adapted to each level of care providers. Surveillance tools based on clinical presentations can be integrated in the health record to optimize the efficiency of data collection (see Appendix D).

As technology advances, some events will be able to resort to electronic health records. When the infrastructure is robust enough to support this

technology without jeopardizing content, the use of electronic records may open up the possibility of more rigorous evaluation, debriefing and reporting. It is worth noting, however, that the technology to support electronic health records at large gatherings is not always available and that in very large gatherings, access to air waves might be at a premium. Furthermore, the appeal of technology should not supersede the need for a reliable strategy to produce high-quality medical records.

The actual record needs to conform to local privacy laws and the HSP should include a clear strategy for the storage and safekeeping of records in accordance with local regulations.

A common record can be used for clinical information, surveillance, and research provided appropriate ethical protocols have been established.

Keypoint: *For WYD2002, two separate medical record forms were used, one for the prehospital care (provided by first aid volunteers and paramedics) and one for the hospital care (provided by nurses and physicians). In the hospital, patients were registered on computers as they would in a GTA hospital. A single-page medical record was printed on-site. Efforts were made to develop a form using checklists to optimize efficiency. The form was machine readable. At regular intervals throughout the event, the medical forms were collected from all delivery points and were scanned to a central surveillance site where staff reviewed the cumulative information in an attempt to identify epidemiological trends*.

It was noted after the event that despite efforts to optimize efficiency in note-taking by providing a variety of check boxes on the medical records, physicians tended to maintain their previously acquired charting habits, often bypassing the check boxes and writing down information (often incompletely or ineligibly). Despite this limitation, a sufficient number of physicians completed the area of the medical record dedicated to syndromic surveillance for that information to alert Toronto Public Health to an outbreak of diarrheal disease in a small group of participants. This information further prompted an investigation that established that the source of infection was a food outlet located outside of the event's venue.

A number of authors have highlighted the importance of developing better record keeping tools for large gatherings, both to enhance the ease of record keeping and to foster the collection of information that is comparable among different events.

Conclusion

In conclusion, the planning and delivery of health services during large gatherings is a complex and lengthy process. Although the components of the HSP are consistent, the implementation of each component will vary greatly from event to event. The success of the HSP begins with strong leadership, effective collaboration and clear mandates, principles, goals, and objectives. The calculation of an accurate PPR on which to base the various aspects of the HSP remains a challenge, although some authors have provided useful models as a starting point. In the face of expected uncertainty, keeping the staffing, roles, and settings as close to those of a local emergency department can enhance the ability of the HSP to respond to the demand. Ultimately, collaboration, coordination, and communication offer both the direction and the flexibility to enable the delivery quality health services at large gatherings.

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Appendix A – World Youth Day 2002 Formulary

Gastrointestinal:

Bismuth Chewables

Aqueous Charcoal

Diarrhea Relief

Docusate Sodium

Extra Strength Calcium Antacid

Famotidine

Fleet Enema

Gravol (Adult/Pediatric)

Heartburn Relief

Immodium

Laculose

Ranitidine

Senna Laxative

Ultra Strength Gas Relief

Metabolic:

Glucagon

Glyburide

Humulin N & R

Regular Insulin N & R

Neurological:

Phenytoin

Paralysing Agents:

Pacuronium

Succinylcholine

Psychiatric:

Haloperidol

Respiratory:

Inahled Steroids

Ipramide

Methylprednisolone

Salbutamol

Sedative:

Diazepam

Lorazepam

Midazolam

Skin:

Acyclovir Ointment

Calamine

HC 1%

Novoclobatasole Cream

Tissue Glue (Dermabond)

Toxicology:

Naloxone

Other:

Aloe Vera

Colchicine

Mannitol

Prednisone

Silver sulfadiazine

Tetanus

Appendix B – World Youth Day 2002 Field Hospital Formulary

Allergic Reaction:

Allertin (Adult/Pediatric)

Diphenhydramine (Adult/Pediatric)

Hydorxizine

Epinepherine 1:1000

Analgesia:

Acetaminophen (Adult/Pediatric)

ASA

Diclofenac

Extra Strength Muscle & Back Relief

Fentanyl

Ibuprofen

Indomethacin

Meperidine

Morphine

Tylenol #3

Topical Anaesthesia:

Lidocaine 1% (without epinephrine)

Lidocaine 1% (with epinephrine)

LET

Antibiotic:

Azithromycin

Cefazolin

Cephalexin

Clauvulin

Cloxacillin

Fluoroquinolone

Gentamicin

Norfoxacin

Sulfamethoxazole/Trimethoprim

Antiseptic:

Chlorhexidine

Hydrogen Peroxide

Cardiac:

Digoxin

Diltiazem

Enalapril

Epinephrine

Isosorbide dinitrate

K-Lyte

LMW Heparin (Anoxiparin)

Metoprolol

Nifedipine

Nitrogylcerin

TNK-tPA

Verapamil

Cold Remedies:

Antitussive

Children's (and junior strength) Cough & Cold

Daytime Cold Relief

Decongestant

Lozenges

Sinus Cold

Diuretics:

Furosemide

Hydrochlorothyazide

Ear:

Mineral Oil

Sodium Sulamide

Eye:

Fluorescein Strips

Homatropine

Irrigation Solution

Ocular Lubricant

Pilocarpine 1%

Tetracaine

Appendix C – Encounter Report

ENCOUNTER REPORT

Group No: ☐☐☐☐☐☐☐☐☐☐ **Subgroup No:** ☐☐☐☐☐☐☐☐☐☐ **Date (mm/dd/yy):** ☐☐ / ☐☐ / ☐☐ **Time (hh:mm)** ☐☐ ☐☐

Sex: ☐ Male ☐ Female

Venue:

☐ Ex Hosp
☐ Ex FA Tent #: ☐
☐ Ex Site

☐ Downsview Hosp #: ☐
☐ Downsview FAU #: ☐
☐ Downsview Site

☐ PR 1 ☐ PR 4
☐ PR 2 ☐ WR
☐ PR 3 ☐ WOC

☐ Other ☐☐☐☐☐☐☐☐☐☐

Provider: ☐ First Aid ☐ EMS ☐ RN

Also Seen By: ☐ First Aid ☐ EMS

Reason for Encounter:

☐ Heat Related
☐ Short of Breath
☐ Lacerations

☐ Sprain
☐ Weak/Dizzy
☐ Headaches

☐ Skin
☐ Chest Pain
☐ Gastro Intestinal

☐ Other: ☐☐☐☐☐☐☐☐☐☐

Treatment:

☐ Band Aid
☐ Gave Water
☐ Tensor/Soft Immobiliz'n

☐ Sun Screen
☐ Advice Medical
☐ Advice General

☐ Dressing
☐ Splint/immobiliz'n
☐ CPR/Started at: (hh:mm): ☐☐ ☐☐

Disposition:

☐ Call EMS
☐ To FAU

☐ To On-Site Hospital
☐ F/U Recommended

☐ Release to Crowd
☐ To Off-Site Hospital

Name of Hospital:

To MD: Only fill if patient to be seen by MD at hospital

Patient Last Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Patient First Name: ☐☐☐☐☐☐☐☐☐☐☐☐

Appendix D – Health Record

Health Record

Chart #: ______________

Group No.: **Subgroup No.:** Venue: **Date (mm/dd/yy)** / / **Time:** /

Patient Last Name: **Patient First Name:** **DOB (mm/dd/yy)** / / **Sex:** ☐ M ☐ F **PWSN:** ☐ **Age:**

Billing Address: **Permanent Address:**

Local Phone Number: ( ) - **City:** **Country:** **Prov/State:**

Permanent Phone Number: ( ) - **Email:** **Postal Code:**

Triage: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Also Seen By: ☐ First Aid ☐ EMS

Previous Encounter#:

Td Req'd: ☐ Yes ☐ No

Allergies: ☐ NKDA

Reason for Encounter: ☐ Heat Related ☐ Weak/Dizzy ☐ SOB ☐ Skin ☐ Sprain ☐ Chest Pain ☐ GI ☐ Headaches ☐ Other:

Time Seen: : **Chief Complaint:**

Nursing Assessment (Add'l Notes on Back):

SYMPTOMS: **Temp:** . **Pulse:** **Resp:** **BP:** /

GI:
- ☐ Diarrhea/Nausea
- ☐ Vomiting
- ☐ Abdo Pain
- ☐ Bloody Stool
- ☐ Jaundice

Resp:
- ☐ SOB
- ☐ Cough
- ☐ Stridor
- ☐ Wheeze
- ☐ Sore Throat

Neurological:
- ☐ Altered Mental Status
- ☐ Fever

Skin:
- ☐ Burns
- ☐ Lacerations/Burns
- ☐ Blisters
- ☐ Rash

Doctor's Notes (Add'l Notes on Back):	**Doctor's Orders** (Add'l Orders on Back):	**Init.**

(Choose One)

DISEASE SURVEILLANCE:
- ☐ GI illness (bloody stool)
- ☐ GI illness (non-bloody stool)
- ☐ Acute febrile illness w. rash
- ☐ Suspected Meningitis/Encephalitis
- ☐ Resp. distress w/o fever
- ☐ Acute resp. infection w. fever
- ☐ Temp. related illness
- ☐ Suspected acute viral hepatitis
- ☐ Botulism-like syndrome
- ☐ Unexplained death
- ☐ No syndromes applicable

Diagnosis: (Choose All That Apply)

ENT/Opthalmology:
- ☐ Conjunctivitis,Ocular FB
- ☐ Dental Pain/trauma
- ☐ Nosebleed
- ☐ Cardiovascular:
- ☐ Hypertension, BPCheck
- ☐ Angina
- ☐ Palpitations
- ☐ MI

Respiratory:
- ☐ Asthma
- ☐ COPD
- ☐ URIT, Pneumonia
- ☐ Anaphylaxis
- ☐ Allergies

Skin:
- ☐ Lacerations/Abrasions
- ☐ Rash NYD

Neurology:
- ☐ CVA
- ☐ Seizures
- ☐ Migraine, Tension headaches

MSK:
- ☐ Back Pain
- ☐ Injury lower extremities
- ☐ Injury upper extremities

GI/GU:
- ☐ GERD/PUD
- ☐ Diabetes
- ☐ Fever NYD

Exanthema:
- ☐ Chicken Pox

Mental Health:
- ☐ Psychosis
- ☐ Anxiety

Systems:
- ☐ UTI
- ☐ Vaginal bleed
- ☐ Heat exhaustion
- ☐ Suspected intox'n

D/C to:
- ☐ Home
- ☐ Venue
- ☐ Morgue

Accompanied by:
- ☐ Family
- ☐ Friend
- ☐ Group Leader
- ☐ First Aid
- ☐ EMS
- ☐ RN/MD

Follow-up:
- ☐ GP
- ☐ Other
- ☐ Given Script

Cognition/Approval of D/C Plan:
- ☐ Patient
- ☐ Family/Friend
- ☐ Other

Other Discharge Diagnosis: **D/C Date (mm/dd/yy):** / / **D/C Time** :

Chart #: _____

Additional Nurse's Comments:

Additional Doctor's Notes:

Additional Orders/Treatment/Medication:	**Init.**

Diagnostic Results:

	Ordered	Result
Hb	☐	☐☐☐.☐
Gluc	☐	☐☐☐.☐
Na	☐	☐☐☐.☐
K	☐	☐☐☐.☐
BHCG	☐	☐☐☐.☐
Urinalysis	☐	☐☐☐.☐
ECG	☐	☐☐☐.☐

X-rays:

Type	Result
☐☐☐☐☐	☐☐☐☐☐
☐☐☐☐☐	☐☐☐☐☐
☐☐☐☐☐	☐☐☐☐☐
☐☐☐☐☐	☐☐☐☐☐
☐☐☐☐☐	☐☐☐☐☐
☐☐☐☐☐	☐☐☐☐☐
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_____

Physician's Signature

Appendix E – Possible Layout for Field Hospital