Dear Colleague,

Thank you again for assisting us with this effort to identify measures of effectiveness in disaster medical response.

In the previous round, you and 38 other experts helped to identify the most meaningful measures extracted from a review of scientific literature. In addition, your group recommended nearly 400 free text measures for consideration. From this, we have selected 140 measures that met criteria established under the research project methodology.

In this round, we ask that you review this refined list of measures. Instructions on selection criteria will be provided on the following page, and on the header of every subsequent page. This is perhaps one of the most critical points of the study, and we are deeply grateful to your commitment to this effort. Your insight is vital in its success. This round should take an estimated 15 minutes to complete.

Should you have any questions, please let us know. If you logged into this survey through your email, you can always "pause" the survey without losing your responses. After completing the page you are currently on and clicking "Next," simply close the webpage. When you are ready to resume the survey, re-open it using the link that was sent to you.

Thanks again,

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Instructions:

Please select all measures that answer the following prompt:

A single-impact natural disaster has struck a large community, resulting in mass traumatic injury and incapacitation of existing medical infrastructure. Medical teams are deployed to assist with provision of medical care spanning 72 hours post event (T+72 hours) through the next two weeks (T+14 days). **What clinical measures are predictive of reduction in morbidity and mortality during this time?**

Consider whether each measure:

Is important
Is a valid means by which to assess performance
Produces useable information
Can be feasibly measured

Use the above criteria when deciding which measures are meaningful. If a measure meets the above criteria and should be retained, click the "yes" button for that measure. Otherwise, click the "no" button.

There are a total of 20 categories in which measures are organized. These categories will be presented in random order over five pages of questions.

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*Evaluation and Diagnosis:

	Yes	No
Are cases of epidemic prone diseases reported to a central agency within 24 hours of onset of illness?	○	○
What percentage of infectious outbreaks are reported to an overseeing epidemiology agency within 24 hours of detection?	○	○
What is the number of disease-specific laboratory confirmed cases?	○	○
Are protocols in place for confirmatory lab testing by a reference laboratory or LRN (laboratory reference network)?	○	○

*Treatment Measures: General

	Yes	No
What is the healthcare provider to patient ratio? (# of providers : # of patients treated/day)	○	○
What is the age specific morbidity rate? (# of those within age group with a medical visit/ # within age group within catchment area/day)	○	○
What are the rates of patients seen within each major age group (infants, children, adolescents, adults, geriatric)? (# within age group/day)	○	○
What proportion of the essential drug list is not available to the prescribing provider? (# of drug types out of stock/# of drugs on essential drug list/day)	○	○
What percentage of patients are delayed in treatment due to resources of providers?	○	○
What percentage of patients have been identified with moderate to severe injuries?	○	○
What is the cause-specific mortality rate? (deaths from "X" cause/those identified with "X" cause/day)	○	○
What number of patients have been treated? (patients/day)	○	○
What are the incidence rates for the most common medical and surgical conditions? (#'s with condition/total patients evaluated/day)	○	○
How many healthcare facilities are open and operating? (functional centers/total centers/region)	○	○
What is the under-5 mortality rate for patients treated? (# of under-5 deaths/# of under-5 patients cared for/day)	○	○
Is medical support provided to local health facilities?	○	○

*Treatment measures: Anesthesia

	Yes	No
What is the quantity of all medical supplies available for response?	○	○
What rate of patients were treated using a pre-established pain protocol? (# of patients treated according to a protocol/ # of patients receiving any analgesia/day)	○	○
What rate of patients with injury received pain control measures? (# of patients receiving pain medication/ # of patients treated for injury or other pain inducing condition/day)	○	○
What percentage of providers reported adequate training to perform the tasks required of them?	○	○

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*Treatment measures: Blood products

	Yes	No
What is the rate of distribution of matched blood products? (# of matched blood units transfused/# of blood units requested/day)	○	○
Are local emergency activation protocols or MOUs for blood use incorporated into response plans?	○	○
What rate of blood products were deemed unusable due to inadequate storage capability? (# of unusable units identified/total # of units available/day)	○	○

*Treatment measures: Critical care

	Yes	No
What is the mortality rate of patients in critical care areas? (# of deaths/# of patients treated in a critical care area/day)	○	○
Are critical care staff available?	○	○
What amount of time elapsed between recognition of surge needs and access to adequate personnel and equipment?	○	○
What criteria are used in end of life and withdrawal of care decisions?	○	○
What is the rate of uncorrectable device failure for critical care devices? (# of failed devices/# of available devices/day)	○	○
What is the healthcare provider to patient ratio in critical care areas? (# of critical healthcare provider days/# of critical care patient days/week)	○	○
What is the rate of transport for critically ill patients? (# of critically ill patients transported to a higher acuity facility/# of patients treated/day)	○	○
What is the rate of age appropriate utilization of mechanical devices? (# of patient days per age group on mechanical support/total # of patients days on a mechanical support/week)	○	○
What basic life support measures are available?	○	○
What is the rate of critical care patients are being boarded in noncritical care capable areas? (critical care patient days spent in noncritical areas/total critical care patient days/week)	○	○

*Treatment measures: Infectious Disease

	Yes	No
What rate of injuries requiring debridement received early antibiotics? (# of patients with injury receiving antibiotics/# of patients identified with injury requiring early antibiotics/day)	○	○
What rate of patients with a communicable disease (airborne, droplet, contact) are hospitalized in an isolation setting? (# of patients in isolation/# of patients with transmissible infection/day)	○	○
What percentage of the WHO essential drug list was available in a pediatric and adult formulation? (# of patients receiving antibiotics/# of patients requiring antibiotics/day (adult, pediatric))	○	○
What duration of time elapsed before environmental control measures were fully in place? (hours)	○	○

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*Treatment measures: Mental health

	Yes	No
How many people have been trained in Psychological First Aid? (# of persons receiving training/# of persons providing any medical care/week)	○	○
What is the rate of provision of mental health resources for children? (# of children receiving mental health resources/# of children screened for mental health concern/day)	○	○
What rate of patients are presenting with behavioral health concerns? (# of patients identified with a behavioral concern as the sole diagnosis/# of patients treated for any condition/day)	○	○
Are mental health services available?	○	○
What mental health surveillance system is in place?	○	○

*Treatment measures: Reproductive health

	Yes	No
What is the rate of stillbirths? (# of stillbirths/# of deliveries/day)	○	○
What is the rate of delivery by C-section? (# of C-sections/# of deliveries/day)	○	○
What is the number of pregnant women being treated? (# of females aged 15-45 identified as pregnant/# of females aged 15-45 evaluated/day)	○	○
What is the preterm birth rate? (# of births < 38 weeks estimated gestation/# of births/day)	○	○
What percentage of personnel are trained in the management of pregnant trauma patients? (# of providers trained in care of pregnant trauma patients/ # of providers in trauma areas)	○	○
What is the rate of post-exposure prophylaxis given? (# of persons delivered full regimen of post-exposure prophylaxis/# of persons identified with high-risk exposures/day)	○	○

*Treatment measures: Orthopedic care

	Yes	No
What is the rate of limb amputation? (# of amputations/ # of identified limb threatening injuries evaluated/day)	○	○
What rate of open fractures required early debridement? (# patients receiving early debridement/ # of patients with open fractures/day)	○	○
What proportion of time was appropriate orthopedic equipment available for patient care? (# of patients with orthopedic treatment deferred due to equipment availability/ # of patients receiving orthopedic injury stabilization/day)	○	○
What is the rate of hospitalized amputations? (# of patients receiving amputation/# of patients treated/day)	○	○
What rate of patients undergoing amputation have been reviewed according to standard of care protocols? (# of patients with amputation receiving review by pre-established protocol/ # of patients receiving amputation/day)	○	○
What is the rate of debridement of dirty wounds? (# patients receiving debridement/ # of patients with contaminated wounds/day)	○	○
What rate of patients need treatment for orthopedic injury? (# of patients with a new orthopedic injury/ # of patients newly evaluated/day)	○	○

*Treatment measures: Pediatric care

	Yes	No
Are pediatric formulations for medications present?	○	○
What is the rate of pediatric patients being cared for in non-pediatric areas? (# of pediatric patient days in a pediatric safe ward/# of pediatric patient days/week)	○	○
Are milk supplies available for infants?	○	○
What proportion of pediatric patients have been screened for malnutrition? (# of patients screened for malnutrition/ # of pediatric patients/week)	○	○
What rate of children require assistive devices such as mechanical ventilation? (# of pediatric patients days on critical care devices/ # of pediatric patient days/week)	○	○
What rate of children have underlying special medical needs? (# of children with identified special need/# of children evaluated/day)	○	○

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*Treatment measures: Renal

	Yes	No
What is the rate of renal failure assessment via rapid protocol? (# of patients evaluated for renal failure by rapid protocol/# of patients with traumatic injury/day)	○	○

*Treatment Measures: Surgical care

	Yes	No
What rate of cases are being treated for non-traumatic conditions? (# of patients treated for non-traumatic condition/ # of patients evaluated/day)	○	○
What is the rate of surgical interventions made without (general) anesthesia? (# of non-sedated non-minor surgical procedures/ # of non-minor surgical procedures performed/day)	○	○
What is the rate of surgical procedures (minor, moderate, severe)? (# of procedures of each type/ # of patients evaluated/day)	○	○
Is sterilization equipment present?	○	○

*Treatment measures: Triage

	Yes	No
What is the rate of retriage? (# of patients triaged more than once/# of patients triaged/day)	○	○
What percent of providers have been trained in the current system of triage?	○	○

*Treatment measures: Infrastructure

	Yes	No
Does a disposal mechanism exist for human waste removal?	○	○
Are infection control procedures in place?	○	○
What is the volume of clean water available per person per treatment facility? (liters of clean water/ # of persons treated/day)	○	○
Are latrines available for patient use?	○	○

*Treament measures: Special needs

	Yes	No
What is the rate of provision of chronic medical care? (# of patients receiving treatment for a chronic medical condition / # of patients evaluated/day)	○	○
What is the rate of provision of physiotherapy? (# of patients receiving rehabilitation services/ # of patients with a new functional limitation/week)	○	○

*Disposition measures

	Yes	No
Is cold storage available for the deceased?	○	○
What percentage of discharged patients have an identified place for follow up care?	○	○
What method is used to hand-off patient care on departure of team?	○	○
What is the ratio of persons per vehicle available for team evacuation?	○	○
Are social services available?	○	○
What percentage of providers have been trained in the fatality management protocol?	○	○

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*Response team: Coordination measures

	Yes	No
Have medical teams been registered with a coordinating body prior to arrival?	○	○
Are local medical staff incorporated into the response?	○	○
Did search and rescue teams coordinate with medical teams?	○	○
What percentage of responders have a clearly defined role?	○	○
Has a clear chain of command been in place?	○	○
Are your medical services being coordinated through the incident command center?	○	○
Was a needs assessment performed by an advanced team?	○	○

*Response team: Health and performance measures

	Yes	No
What rate of staff were unable to complete the full duration of duty secondary to a physical limitation? (# of responders unable to perform required function due to physical concern/# of responders available midweek/week)	○	○
Have providers had prior disaster training?	○	○
What rate of responders report inability to perform assigned functions due to a mental health concern? (# of responders unable to perform required function due to mental health concern/# of responders available midweek/week)	○	○
What rate of your staff needed to be evacuated from the treatment site and why? (# of evacuated staff/# of staff on site midweek/week)	○	○

*Response Team: Logistics measures

	Yes	No
Is personal protective equipment available for providers?	○	○
Is accommodation in place for providers?	○	○
Is electricity available?	○	○
Are safety measures in place for providers?	○	○
What percentage of impacted population are displaced secondary to housing of responders?	○	○
Has food and water been transported with the team?	○	○
Are translators present?	○	○
What is the ratio of translators:providers at the midpoint of the response?	○	○

*Public Health Measures

	Yes	No
What is the vaccination rate? (# of persons provided "X" vaccination/# of persons evaluated/day)	○	○
Are public health staff incorporated into response?	○	○
Is communicable disease monitoring being performed?	○	○

*Demographic information

Name: _____

Email Address: _____

Thank You

Thank you again for your participation in this study. Over the coming weeks, your answers and those from our other study participants will be compiled. These responses will be used to construct the final rounds of this study. We will contact you within the next one to two months for the next round of surveys.

Again, your participation is greatly appreciated as we construct a tool to allow more meaningful assessment of disaster response. Our goal is to enable responding agencies to highlight successes and identify opportunities for improvement.

Please feel free to contact us should you have any questions or feedback, or use the comments box below.

Thanks again,

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Comments, questions, or feedback: