



Emergency Medicine Society of South Africa

**PRACTICE GUIDELINE
EM009**

MASS GATHERING MEDICAL RESOURCE MODEL

Mass gatherings may be defined as a planned event with more than 1000 people in attendance. They are a frequent occurrence in South Africa. Medical resourcing of these events has previously been haphazard, and varied between service providers and provinces. EMSSA believes that appropriate medical staffing is essential at Mass Gatherings. The aim of this Practice Guideline is to illustrate the Mass Gathering Medical Resource Model as adopted in South Africa.

This was developed by the National Department of Health in 2008.

Excluding the cover page, this Practice Guideline is **5** pages.

Date of publication:	October 2009
Date of review:	September 2011
Responsible committee member:	Prof Lee A Wallis

Mass gathering events are frequently associated with higher patient presentation rates than the general public generate, and may be associated with Major Incidents. In order to appropriately staff for such events, without overstressing limited EMS resources, a medical resource model has been developed and validated.

The attached Medical Resource model is as adopted by National Department of Health; it will form part of Mass Gathering regulations in due course. All mass gatherings should have their medical cover planned using this model.

The model

Within each of the categories as listed in the table, risk factors are identified and allocated a score. Only one score is allocated per category and this will be the highest possible score within that particular category.

For example, in section A, a New Year celebration event may also include a pyrotechnics display: both of these risks are listed but a score of 7 will be allocated (for the New Year celebration, as it is higher than the score of 4 allocated to a pyrotechnic display).

The scores of all the categories are added, and the resulting total score number will correspond to a recommended number of medical resources.

CATEGORY	RISK FACTOR	SCORE
(A) Nature of event	Classical performance	2
	Public exhibition	3
	Pop/rock concert	5
	Dance event (Rave / Disco)	8
	Agricultural/country show	2
	Marine	3
	Motorcycle display	3
	Aviation	3
	Motor sport	4
	State occasions	2
	VIP visits/summit	3
	Music festival	3
	International Event	3
	Bonfire/pyrotechnic display	4
	New Year celebrations	7
	Demonstrations/marches	5
	Sport event with Low risk of disorder	2
	Sport event with Medium risk of disorder	5
	Sport event with High risk of disorder	7
	Opposing factions involved	9
(B) Nature of Venue	Indoor	1
	Stadium	2
	Outdoor in confined location, e.g. park.	2
	Other outdoor, e.g. festival	3
	Widespread public location in streets	4
	Temporary outdoor structures	4
	Includes overnight camping	5
(C) Seated or unseated	Seated	1
	Mixed	2
	Standing	3
(D) Spectator profile	Full mix, in family groups	2
	Full mix, not in family groups	3
	Predominately young adults	3
	Predominately children and teenagers	4
	Predominately elderly	4
(E) Past history	Good data, low casualty rate previously (less than 0.05%)	-1
	Good data, medium casualty rate previously (0.05% - 0.2%)	1
	Good data, high casualty rate previously (more than 0,2%)	2
	First event, no data	2

(F) Expected numbers	< 1000	1
	< 3000	2
	< 5000	4
	< 10 000	8
	< 20 000	16
	< 30 000	20
	< 40 000	24
	< 50 000	28
	< 60 000	32
	< 70 000	36
	< 80 000	42
	< 90 000	46
	< 100 000	50
	< 200 000	60
	< 300 000	70
(G) Expected event duration (including queuing from gate open time)	Less than 4 hours	1
	More than 4 less than 12 hours	2
	More than 12 hours	3
(H) Seasons (outdoor events)	Summer	2
	Autumn	1
	Winter	1
	Spring	1
(I) Proximity to hospitals (nearest suitable Emergency Centre)	Less than 30 min by road	0
	More than 30 min by road	2
(J) Profile of hospitals	Choice of Emergency Centres	1
	Large Emergency Centre	2
	Small Emergency Centre	3
(K) Additional hazards	Carnival	1
	Helicopters	1
	Parachute display	1
	Street theatre	1
	Water hazard	1
	Onsite alcohol use	1
(L) Additional on-site facilities	Suturing and or Plastering	2
	Vending machine for over the counter medication	2
	Public access AED	1
	Existing full time operational medical facilities on-site	2

Calculation of the Event's Risk Score

To calculate the risk score for an event, the following calculation, referring to the categories described above, is done:

$$\text{Event risk score} = \text{(The sum of the scores of sections A to K) minus (the score of Section L)}$$

The resultant Risk Score obtained is then referenced against the medical resource matrix as shown below.

SCORE	Ambulance	BLS	ILS	ALS	Ambulance Crew	Doctor	Nurse	Coordinator
<20	0	2	0	0	0	0	0	0
21-25	0	4	0	0	0	0	0	0
26-30	1	4	1	0	2	0	0	0
31-35	1	6	1	1	2	0	0	visit
36-40	1	8	1	1	2	0	0	visit
41- 45	2	12	1	1	4	1	0	1
46- 50	2	16	2	2	4	1	1	1
51-55	3	20	3	3	6	2	1	1
56-60	3	24	3	3	6	2	2	1
61-65	4	32	4	4	8	2	2	1
66-70	5	40	5	5	10	3	3	1
71-75	6	48	6	6	12	3	3	1
76-80	8	64	8	8	16	4	4	1
81-85	10	80	10	10	20	5	5	2
86+	15	120	15	15	30	6	6	2

As an example:

An event that scores 43 on the risk profile will require the following medical resources to be deployed at the event -

- 2 Ambulances
- 4 Crew members to staff the ambulances
- 12 BLS (Basic Life Support) providers
- 1 ILS (Intermediate Life Support) provider
- 1 ALS (Advanced Life Support) provider
- 1 Doctor
- 1 Medical Coordinator