



OPERATIONS THROUGHPUT DETERMINES GOLDEN-HOUR

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INTRODUCTION

- Golden-hour, a time-tested concept for trauma-care.
- It involves a systems approach encompassing healthcare, logistics, geographical, environmental and temporal variables.
- Golden-hour paradigm in mass gathering-medicine entwines along healthcare availability, accessibility, efficiency and interoperability
- mass-gathering medicine invokes an opportunity for incorporating operations-throughput as a determinant of golden hour.

MATERIALS AND METHODS

- golden-hour as a determinant of operations-throughput was evaluated during the Indian Medical Mission operations for Hajj-2016, 01 Aug to 30 Oct
- Mobile medical task-forces detailed for strategic mass-gathering Locations 18 Static-clinics having basic first-aid capabilities
- One mobile referral tent-clinic with 35 tent-clinics having medical attendance facilities only
- Two strategically sited 40-bedded secondary care referral facilities
- Tertiary-care patient transfers coordinated with 28 Saudi Arabian hospitals.
- The average range of patient encounter time, waiting-time, turnaround-time were assessed

RESULTS

S. No.	Patient-care variables	Encounter time (mins)	Waiting time (mins)	Operation turnaround Time (mins)
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Pre-Hospital patient care (On-site primary-care through mobile-medical-task-force during Mass-gathering congregations)

1	Rescue/reporting/accessibility to healthcare professional	1-30	0-5	20-60
2	Immediate first-aid	5-20	0-5	20-60
3	Ambulance arrival at site of injury/first-aid	0-15	0-15	30-150
4	Stretcher/wheelchair transfer from site of first-aid to ambulance/primary-care/secondary-care	0-20	0-2	30-150
5	Ambulance transfer from site of first-aid to primary/secondary-care	10-40	10-20	30-150

Pre-Hospital patient care (Static-clinic based primary-care)

1	Low acuity patients	2-10	0-60	2-60
2	High acuity patients	20-40	0-5	10-60
3	Checking of vitals	3-5	0-30	3-30
4	Systemic examination	2-15	0-15	2-15
5	Blood glucose by glucometer	2-3	0-40	2-40
6	Collection of medicines from pharmacy	2-10	0-60	2-60
7	Ambulance transfer from static-clinic to secondary/tertiary-care	30-90	0-60	30-150

s. no.	Patient-care variables	Encounter time (mins)	Waiting time (mins)	Operation turnaround Time (minutes)
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Pre-Hospital patient care (Tent-clinic based primary-care during five critical days of Hajj)

1	Low acuity patients	2-10	0-20	2-20
2	High acuity patients	20-40	0-2	20-40
3	Checking of vitals	3-5	0-10	3-10
4	Systemic examination	2-15	0-10	2-25
5	Blood glucose by glucometer	2-3	0-10	2-10
6	Collection of medicines from pharmacy	2-10	0-20	2-20
7	Ambulance transfer from tent-clinic to secondary/tertiary-care	10-20	0-30	10-60

Hospital-based patient care (Secondary-care)

1	Low acuity patients	2-5	0-60	2-60
2	High acuity patients	20-40	0-2	20-40
3	Electrocardiogram	5	0-30	5-30
4	Urine routine and microscopy	10	0-20	10-20
5	Blood glucose by glucometer	2-3	0-40	2-40
6	Malaria/ Dengue/HCV by rapid kits	30	0-30	30-60
7	Haematology tests	30	0-30	30-60
8	Clinical chemistry tests	30	0-30	30-60
9	Manual X-ray	20	0-30	30-60
10	Ultrasonography	5	0-20	5-20
11	Minor surgical procedures	30	0-60	30-60
12	Orthopaedic procedures	30	0-60	30-60
13	Collection of medicines from pharmacy	2-10	0-60	2-60
14	Ambulance transfer from secondary-care to tertiary-care	30-60	0-60	60-180

S. No.	Healthcare personnel turnaround time	Site/home visit by doctor	Patient brought to healthcare facility
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1	Mobile-medical-task-force during Mass-gathering congregations	20-60	5-30
2	Tent-clinic based primary-care	10-30	5-15
3	Static-clinic based primary-care	10-60	5-15
4	Hospital-based secondary-care	10-60	5-30

DISCUSSION AND CONCLUSION

- operations throughput remains an important determinant of golden-hour in mass-gathering medicine.
- Early transportation of patient to definitive-care reduces treatment initiation time by 50%
- Operation throughout determine availability, accessibility, efficiency and interoperability of bottlenecks during golden-hour
- Evidence-based guide lines, standards, alert and response systems need to be developed

