



SVIMS

REPORT ON AIRPORT DISASTER- MOCK DRILL



Report on Airport Disaster – Mock Drill

Place of mock drill: Tirupati Airport and SVIMS

Date: 28th may 2019

Time	External communication	Action
11:15 hrs	SVIMS Emergency Room (ER) received a call from airport authority of India, Tirupati about a flight crash while landing. Information: plane crashed and caught fire while landing and there were 70 passengers including cabin crew were on board.	
11:18 hrs		<p>“Disaster alert” message was sent through SVIMS internal disaster activation process.</p> <ul style="list-style-type: none"> - Information passed to SVIMS Director - Director Dr T.S Ravikumar reached ER immediately and led the team. - Dr Ratna Kumar called airport authority, Tirupati and Confirmed the disaster - Triage team-1 led by Dr Anitha (Junior Resident) and Mrs Rajeswari (Staff nurse) was instructed to keep 6 trolleys and 4 wheel chairs vacant. - Triage team -2 led by Dr Pavan (Junior Resident), Mrs Dhanareka (In charge nursing Staff) established triage -2 at entrance of Emergency Room. - Disaster team leader instructed triage team-2 to arrange 5 wheel chairs and 5 trolleys. - Team leader also briefed about free flow of incoming patients to designated areas as mentioned below. - Reassigned the Area in ER for different triage category victims <ul style="list-style-type: none"> ○ Resuscitation Bay- priority -1 Red ○ ER both left & right side beds – priority - 2 Yellow ○ ER Triage area and medicine ward– Priority -3 Green - Three trolleys in trauma bay, three beds in Emergency Room along with ten trolleys in triage area were kept ready to accommodate casualties. - Radiology department confirmed availability of two CT scan machines - Corridors around ER were cleared off obstacles for easy mobility of casualties
11:21hrs	Dr Ratna Kumar phoned airport authority, Tirupati and enquired about current	- Same has been communicated to the team

	situation in Airport, Tirupathi. Dr M Madhusudan replied that triage process was going on and further communication will be given before shifting of patients.																
11:25hrs		<ul style="list-style-type: none">Disaster warning message was sent to the designated group in SVIMSGeneral surgery team led by Dr Mutheeshwariah was instructed to present availability of OT tables for emergency surgery if necessary.One set each of thoracotomy tray, Craniotomy tray, laprotomy tray and urology tray were kept ready – reported by Dr Mutheswara Rao HOD, G surgery.Medicine team reportedRadiology team reportedAnaesthesia team reportedCTVS reported(Three doctors and one technician)Neurosurgery reported															
11:28hrs		<ul style="list-style-type: none">Nursing in charge officer also gathered the information on available Blood products in the blood bank and informed to team leader.Packed cell RBC<table><tr><td>Packed RBC</td><td>A⁺ - 14</td><td>B⁺ - 22</td><td>AB⁺ - 5</td><td>O⁺- 17</td></tr><tr><td></td><td>A⁻ - 2</td><td>B⁻ - 5</td><td>AB⁻ - 1</td><td>O⁻ - 7</td></tr><tr><td>Whole Blood</td><td>A⁻ - 1</td><td>-</td><td>-</td><td>O⁺- 1 O⁻ - 1</td></tr></table>Disaster team leader instructed blood bank to prepare for massive blood transfusion in case of necessity.	Packed RBC	A ⁺ - 14	B ⁺ - 22	AB ⁺ - 5	O ⁺ - 17		A ⁻ - 2	B ⁻ - 5	AB ⁻ - 1	O ⁻ - 7	Whole Blood	A ⁻ - 1	-	-	O ⁺ - 1 O ⁻ - 1
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11:31hrs		- Disaster action activated															
11:30hrs	SVIMS ER received a call from Airport medical Team, Tirupati, from accident site about the transportation of two priority-1 victims [one patient with severe head injury (GCS-7) and another one both severe head injury (GCS-7) and chest injury], to SVIMS hospital for definitive care.	<ul style="list-style-type: none">Both triage teams are alerted and instructed to shift victims directly to resuscitation bay bypassing triage and name registration.Resuscitation team is also informed and instructed to prepare for receiving the casualties.															
11:34hrs		<ul style="list-style-type: none">Resuscitation teams checked all emergency equipments and drugs (advanced airway management, defibrillator, crash cart, ventilators, oxygen cylinders, cardiac monitors) and loop was closed with team leader.Sarada Devi nursing in charge officer confirmed availability of two tables in CT OT.Ambulance bay was cleared off vehicles and kept readyPatient information centre and Public address system was established outside triage area by Medical social worker and public relation officer to manage the crowd and the press. List of all emergency numbers															

		were kept ready for external communication.
11:40hrs	<p>-Received a call from airport medical team and the information was as follows</p> <p>Total victims- 70</p> <ul style="list-style-type: none"> • Priority-0 – Black colour code -8 patients - Dead • Priority -1- Red colour code -10 patients • Priority -2 - Yellow colour code- 12 patients • Priority-3 - Green colour code-10 patients <p>Passengers without any injuries – 40</p> <p>Among which total six patients were transported to SVIMS for further treatment among which two were in priority – 1/ Red category (One with severe head injury (GCS-8) and other with both severe head injury (GCS-7) and chest injury). Rest of four were in priority -2 / Yellow category.</p>	<ul style="list-style-type: none"> • Same was conveyed to the all team members by Dr Ratna Kumar • Team leader explained plan of action on resuscitation and transportation of priority- 1 victims and instructed to <ul style="list-style-type: none"> ○ Neurosurgery team – to alert HOD to prepare CT OT for craniotomy ○ Radiology Team – To keep Both CT scans vacant.
11:42 hrs		<ul style="list-style-type: none"> • Team Leader reconfirmed the preparedness from all sub-teams – resuscitation team, communication to hotline 0877-2288888, radiology, General surgery/Trauma surgery, thoracic surgery, anaesthesia, Nursing, Blood bank. • Readiness of equipment was confirmed – Ultrasound machine, defibrillators, ventilators, working oxygen ports, Thoracostomy tube along with ICD tray and endotracheal tubes with working laryngoscopes. • Urology team did not report
11:53hrs		<ul style="list-style-type: none"> • First patient was received • Triaged under red and named as subject -1
11:54hrs		<ul style="list-style-type: none"> • Patient -2 was received from ambulance under category red and named as subject -2 • Both patients were shifted directly to resuscitation bay as per team leader's instructions. • Team leader instructed to do log roll during shifting of patients and cervical stabilization for spinal protection. • Subject 1- Airway protection by endotracheal intubation with cervical spine stabilization was done. <ul style="list-style-type: none"> ○ Primary survey was done as ATLS protocols ○ EFAST- negative for free fluid in pericardial space, peritoneum and

		<ul style="list-style-type: none"> ○ Pelvic cavity. ● Subject 2- Primary survey – GCS- E2V2M3 -7/15 with unequal pupils and left side not reacting to light with suspected cervical spine injury <ul style="list-style-type: none"> ○ Airway stabilized with Endotracheal intubation ○ -Neurosurgeons opted for CT brain, chest and C-spine. ○ -Radiology team was instructed to do immediate CT scan to subject -2 prior to subject-1 as per priority. ○ -Subject 1 was shifted to Neurosurgery operation theatre for decompressive craniotomy ○ -Subject 2 was shifted to cardiothoracic surgery operation theatre for exploration.
11:55hrs	Medical team from airport conveyed that all patients were cleared from the site	
11:58hrs		<ul style="list-style-type: none"> ● Disaster all clear message was sent to designated group
12:04hrs	Medical team from airport asked about summary of actions in ED,SVIMS	<ul style="list-style-type: none"> ● Team leader summarized whole team about resuscitation and plan of action on both patients.
12:15hrs		<ul style="list-style-type: none"> ● Disaster debriefing was done by Dr. T.S. Ravikumar, Director Cum VC to all the team members and appreciated their commitment

At Airport Tirupati

Time	Situation	Medical team action
11:15 hrs	SVIMS Emergency Room (ER) received a call from airport authority of India, Tirupati about a flight crash while landing. Information: plane crashed and caught fire while landing and there were 70 passengers including cabin crew were on board.	
11:20hrs		<ul style="list-style-type: none"> ● SVIMS medical team entered the airport after all security formalities ● One medical team each from Ramadevi hospital and Narayanadri hospital also entered airport. ● Dr J Gowtham Kumar and Dr M Madhusudan from SVIMS conducted the pre-brief with all available health care professionals. ● Medical team received all first aid kits and colour coded tags from airport authority. ● Whole group was divided in to, ● One triage team –to segregate patients at collection point

		<ul style="list-style-type: none"> Two resuscitation teams – to stabilize patients at triage area Two transportation teams- for quick and safe mobilization of Stabilized patients <ul style="list-style-type: none"> One team – for documentation of events and patient mobilization
11:25hrs	<p>-Separate areas were designated for stabilizing the victims on priority basis (Triage area).</p> <p>- Airport authority rescue team shifted all passengers from accident site to collection centre.</p>	<p>- Triage team assessed the passengers as per field triage protocol and applied colour coded tags</p> <p>- Triage team with the help of rescue team started shifting of the patients to triage area in a sequence as per colour code tags.</p> <p>Preliminary report by triage team</p> <p>Total victims- 70</p> <p>Priority -0 – Black colour code -8 patients -Dead</p> <p>Priority -1- Red colour code -10 patients</p> <p>Priority -2 - Yellow colour code- 12 patients</p> <p>Priority -3 - Green colour code-10 patients</p> <p>Passengers without any injuries – 40</p>
11:28hrs	<p>- Cabin crew were identified and separated from rest of the passengers</p> <p>- Rescue team were moving passengers as per priority to designated spaces in triage area.</p>	<ul style="list-style-type: none"> Resuscitations teams started stabilizing the passengers in triage area. Resuscitation team with the help of transportation team planned for transportation of victims to designated hospitals as per severity and available services at receiving hospitals. Resuscitation team
11:32hrs		<ul style="list-style-type: none"> Transport team informed SVIMS ED about transportation of two head injury patients under priority -1 Rest of the priority 1 and priority 2 patients were transported to other hospitals after re-triaging and resuscitation.
11:45hrs		<ul style="list-style-type: none"> Cabin crew was identified and separated from rest of the passengers. Blood and Urine Samples were collected from pilot and Co-pilot as per protocol and handed over to authorized person from airport authority
11:50hrs		<ul style="list-style-type: none"> All priority -3 patients were shifted to airport first aid center for further evaluation. Rest of the 30 passengers were without any injuries and shifted out by airport vehicle.
11:55hrs	All patients were cleared from triage area	<ul style="list-style-type: none"> Medical team communicated the same to SVIMS ED
12:00hrs	All teams gathered near triage area along with airport director.	<ul style="list-style-type: none"> Brief reporting was done by each team to the director
12:30hrs	All team leaders assembled in committee hall in new airport terminal for debriefing	<ul style="list-style-type: none"> Dr Madhusudan M and Dr J Gowtham Kumar explained the actions done by medical team along with a note on areas to improve.

Debriefing at SVIMS

Done by Team leader Dr T S Ravikumar

- Time line of external communication and actions were briefed by Dr Ratna Kumar
- Mr. Madhu summarized timeline of Internal disaster activation through messages and public addressal system
- Team leader appreciated the process of disaster activation through both redundancies(Text to mobile phones and hospital internal addressal system by voice)

Learning Points

- Orthopaedic department (BIRRD hospital) was not involved in the mock drill.
- Staff from pharmacy department was not involved in the drill and needs to be corrected.
- Feedback was obtained from volunteers.
- Lacuna in Spinal immobilization during transfer of patient from ambulance has to be addressed.

Debriefing at airport

Done by airport director and appreciated all the members involved in the mock drill process.

Learning Points

- As it was a mock drill, ambulance was parked near the terminal block and so reached immediately to the accident site, but in real scenario it may not be possible to reach the airport immediately. This needs to be addressed in the next mock drill.
- At the site of temporary triage area all ambulances were parked back to back in a single lane which hindered the shifting of patients into ambulance. The same was addressed during debriefing session at airport.
- Airport rescue team was not equipped with spinal immobilizers.
- There was some communication gap between airport rescue team and health care team which led to delayed transportation of priority one patient.

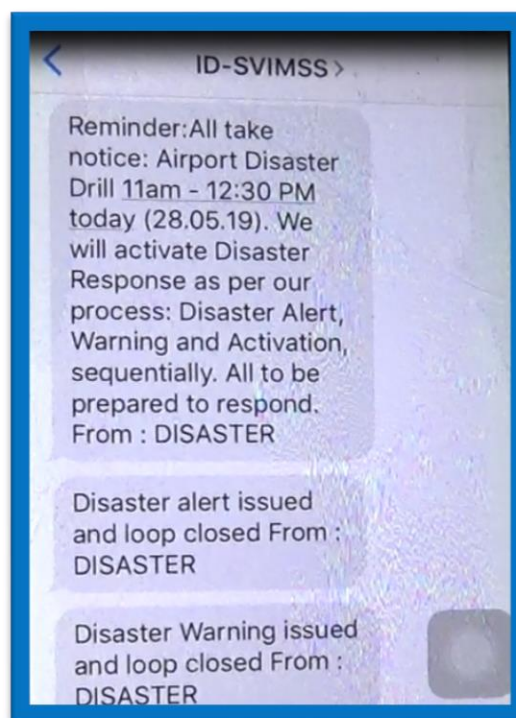


Image showing SMS alert in the mobile after Disaster activation

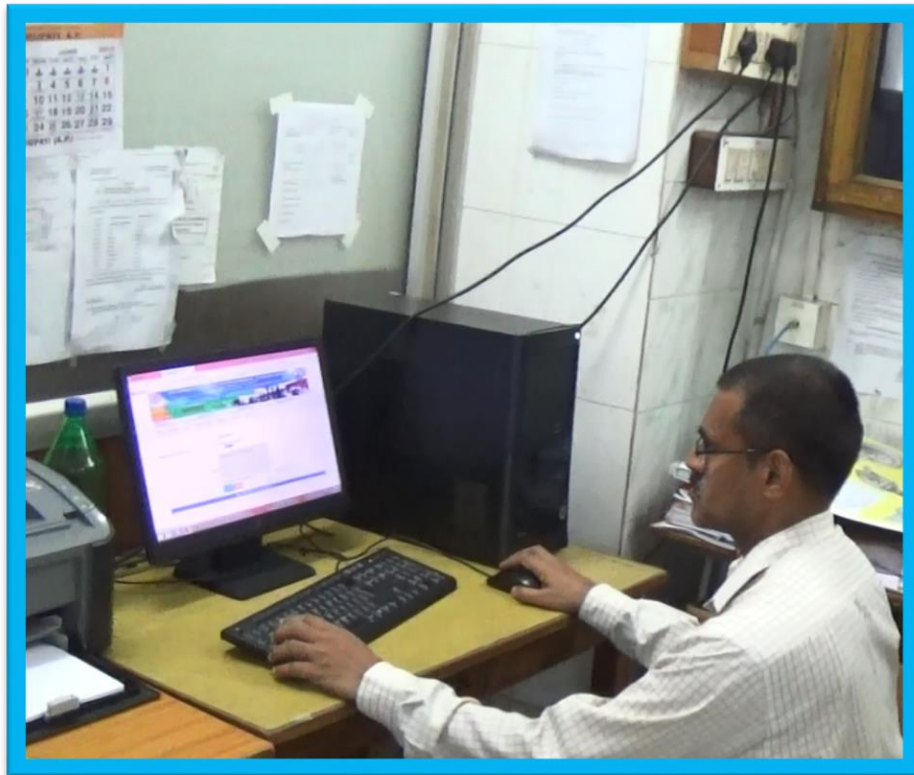


Image showing activating Disaster alert



Established Triage II to accommodate more casualties



In charge nursing staff conveying information on available blood and blood products in blood bank



Patient information centre was created in front of Emergency Room as a part of Disaster preparedness



Summarizing the information received from Airport authorities to the members



Assigning roles and responsibilities to the members by the Director



Receiving Patients from Ambulance by ER staff, SVIMS



Resuscitation of subject-1 by team of Doctors under supervision of the Director



Resuscitating Subject-2 at ER,SVIMS



Debriefing and appreciation by the Director at the end of Disaster drill.



SVIMS team participated in Disaster mock drill

At Airport, Tirupati



Plane crash while landing in Tirupati airport



Shifting of victims from accident site to collection area by Rescue team



Triaging with colour tagging at collection area by SVIMS medical team



Shifting of priority 1 patient from collection area to treatment area



Shifting of Priority 1 patient to SVIMS ambulance for definitive care



Debriefing with Airport director