Disaster Management Plan of IGMC Hospital, Shimla

December, 2019

Submitted and prepared by GeoHazards Society in technical support from Shimla Municipal Corporation, Shimla, HP and UNDP.

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I. Background

The Indira Gandhi Medical College, which is one of the few major hospitals in Shimla city of Himachal Pradesh, not only caters the needs of the communities in the city, but also serves health services to the communities spread across Himachal Pradesh state. It is the most important health facility in Shimla and therefore it is of utmost importance that the hospital to be prepared to respond to any emergency or disastrous event.

The Hospital Safety Guideline developed by National Disaster Management Authority mandates the Hospital Disaster Management Plan (HDMP) *"optimally prepare the staff, institutional resources and structures of the hospital for effective performance in different disaster situations"*. It further states that "*each hospital shall have its own Hospital Disaster Management Committee (HDMC) responsible for developing a Hospital Disaster Management Plan*". Members of this committee shall be trained to institute and implement the Hospital Incident Response System (HIRS) – for both internal and external disasters. The IGMC hospital, which is prone to many hazards such as earthquake, landslide, flood and fire etc. has considered to develop a Disaster Management Plan. This plan has been prepared to help the hospital manage various types of events, from simple and limited emergencies to major incidents such as earthquakes. The plan has several levels of activation depending on the type of emergency situation.

II. Objectives

1. To ensure preparedness of the IGMC hospital to respond and recover from internal and external emergencies;
2. To ensure continuity of essential activities, critical services and safety of its hospital staff, patients, visitors, and the community;
3. To coordinate and organize response to various incidents including protection of the facility and hospital services.

III. Overview of the hospital

Himachal Pradesh Medical College at Shimla (HPMC) was established in the year 1966 with admissions of 50 students in the first batch. Himachal Pradesh Medical College was renamed Indira Gandhi Medical College (now popularly known as IGMC in abbreviated form) in 1984. IGMC is affiliated to Himachal Pradesh University, Shimla. With the establishment of Medical College in the State, the hopes and aspirations of the people of the state were met with the standards of health services going and students benefiting with the advantage of getting better educational avenues. The existing bed strength of the hospital is 800.

Table 1 – Current Human Resources at IGMC, Shimla

Sl. No.	Existing Human Resource Capacity	Number
1	Departments	37
2	Faculty Staff	185
3	Other Doctors	122
4	Admn/Ministerial Staff	87
5	Para Medical Staff	231
6	Nursing Staff	875
7	Class IV	488
8	Supporting Staff	65
9	Nursing Teaching Staff	31

IV. Types of emergency

The IGMC hospital may be affected by various level of emergencies. It may have external, internal or combination of external and internal such as earthquake that can affect the functionality of the hospital. The plan will help hospital staff respond in a proactive manner to various hazards be it internal or external. This will also enable the IGMC hospital to minimise injuries and casualties in case of any unforeseen incident or accident.

a. Level I

Level-I incidents can be managed by the Emergency Department with the existing staffs and resources. With its staff on duty and resources, the emergency department can handle a maximum of few critically injured cases at any given time with minimal disruption to normal services. There may be need for partial activation of Incident Response System (IRS) and activation of some departments. Level I emergency decisions will be made by the Incident Commander based on report from the ED.

b. Level II

Level-II incidents would mean large mass casualty incidents requiring the activation of the IRS and the hospital Emergency Operation Centre (EoC). The decision to declare a Level II emergency will be made by the Incident Commander based on report from the incident site / field.

c. Level III

Level-III incidents would be in cases where the hospital itself is affected by a localized event and there is a need to evacuate staff, patients and visitors and resources may need to be mobilized from outside the facility. EoC will need activation and decision to declare a Level III emergency will be made by the Incident Commander based on report from the Incident site.

d. Level IV

Level IV incidents would be in cases where the hospital as well as the city is affected by a disastrous event such as an earthquake. The hospital may have to evacuate staff, patients and visitors as necessary, activate IRS and prepare for mass casualty. EoC will need activation and decision to declare a Level IV emergency will be made by the Incident Commander based on report from the Incident site / field.

V. Hospital Disaster Management System

1. Hospital Disaster Management Committee (HDMC)

The IGMC Hospital Disaster Management Committee (HDMC) shall consist of the following members:

Table 2 – HDMC Members:

Sr	**Name of the Departments / Designation**	**Name of the committee members**
1.	Medical Superintendent	Dr. Janak Raj
2.	Hospital Administrator	Dr Shomin Dhiman
3.	**Nodal Officer of Disaster Management**	**Dr. Yashpal Ranta**
4.	HoD, Neurology	Dr. Sudhir Sharma
5.	KNSHM&C	Dr. Subash Chauhan
6.	HoD, ENT	Dr. Ramesh Azad
7.	Department of Cardiac Anaesthesia	Dr. Yashwant
8.	Department of Pathology	Dr. Rajni Kaushik
9.	Department of Anaesthesia	Dr Ramesh Kumar
10.	Deptt of Bio chemistry	Dr Sumita
11.	Office In charge Central Store	Dr Rahul Gupta
12.	Prof and Head of CTVS	Dr Sudhir Mehta
13.	Deptt of Dermatology	Dr G.R. Tegta
14.	Deptt of Ophthalmology	Dr R.L. Sharma
15.	Sood Deptt of Paediatrics	Dr Ashwani K
16.	Deptt of Pulmonary	Dr Malay Sarkar
17.	Nursing Superintendent	Mrs Kamla Shukla
18.	Deptt of Microbiology	Dr Suruchi Bhagra
19.	Deptt of Surgery	Dr Dhruv Sharma
20.	Security In-Charge	Sh Bhim Singh Guleria, Mr Yader Chand Verma
21.	HPPWD	Er Baldev Thakur

The HDMC shall be responsible for:

- Drafting and endorsement of the hospital disaster management plan;
- Operationalization, review and updating the plan;
- Conducting regular drills, at least two table-top exercises and one drill on an annual basis;
- Ensuring all staff are sensitized on the plan through dissemination meetings;
- Ensuring all new staff have disaster management training;
- Ensuring all the Head of Departments (HoDs) and In-Charges of Wards/ Departments develop job-cards (detailing actions during emergencies) for every staff member as per the roles and responsibilities.
- Ensuring supplies required for emergency response are stored and ready to use as per sample stock inventory for disaster stores**.**
- Liaison with health department, State Disaster Management Authority, police forces, and other hospitals/ health facilities to ensure operationalization of the plan;
- Take decisions to systematically reduce risk (structural and non-structural mitigation and preparedness actions) components of the hospital to achieve maximum functionality during disasters/ emergencies.

2. Hospital Incident Response System

The Hospital Incident Response System (HIRS) consists of the following structure. The overall responsibility for the management of the incident/emergency/disaster rests on the Incident Commander, including the management of all personnel involved. Each box in the table will be allocated with two successors in case the designated person is unavailable at site during an emergency. HIRS is flexible and the Incident Commander shall only activate the required positions, or functions. Under the HIRS, one person could hold more than one position or work of one position could be allocated to different people.

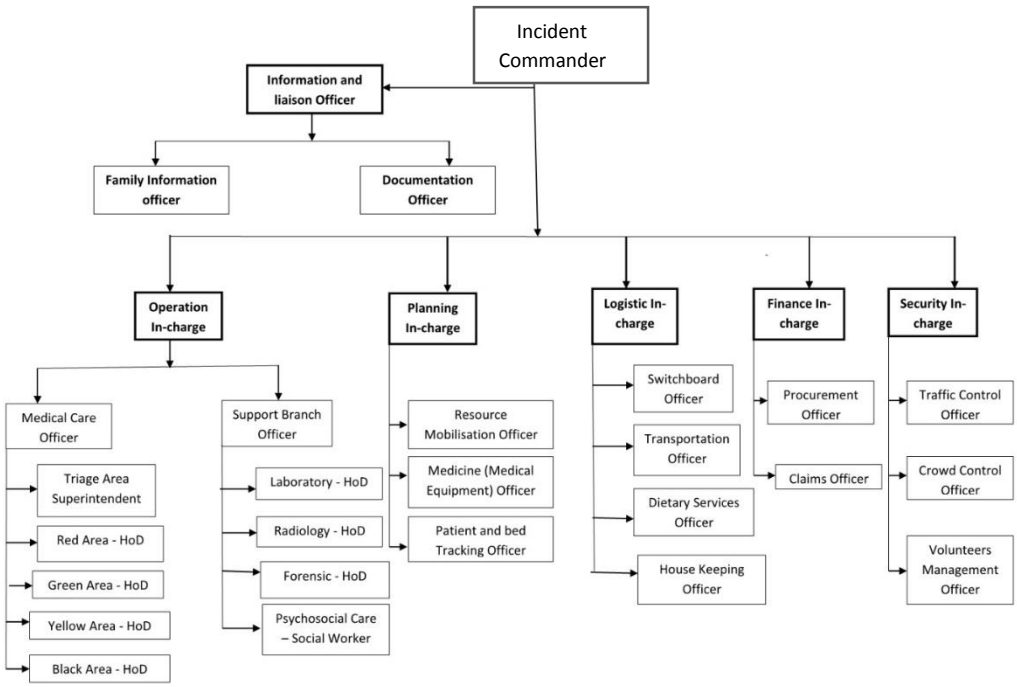


Table 3 – Designated IRS Positions for IGMC -

	IRS Role	Name, Position	Mobile Number
1	**Incident Commander**	Dr Mukand LaL, Principal	9418223636
	Dy Incident Commander	Dr. Janak Raj Sr Medical Superintendent	9418820100
2	**Safety and Security Officer**	Dr Rahul Gupta, Security In-charge	7018177484
		Sh Bhim Singh Guleria, Crowd Control Officer	9418100639
		Sh Devi Ram Sharma, Traffic Control Officer	9418100659
		Volunteer Management Officer	N.A
3	**PIO**	Dr Janak Raj, Public Relations Office Sr. Medical Superintendent	9418820100
	Liaison	Dr Saad Rizvi, Office In-charge MDR	9459347347
4	Documentation Officer	Tej Ram, Staff for MS office	-
5	Family Information Officer	As per MS office order	-
6. Operations Section			

	1) Chief	Dr. Janak Raj, Medical Superintendent	9418820100
		Dr Jobta, HoD, Emergency Medicine Department	9418341202
		Emergency Physician	N.A
	2) Medical Care Branch		
	1) Lead/Medical Care Officer/Triage area superintendent	Dr Jobta, HoD, Emergency Department	9418341202
		Smt Kamla Shukla, Nursing Superintendent	9418079093
		Dr Arun Gupta / Dr Mukund Lal HoD, Surgical/Orthopaedic	9816025707
	2)Red Area	Emergency Physician	
		Sr. Medical Officer	
		In-charge Emergency	
	7)Yellow Area	HoDs, Surgery and Orthopaedic and respective In-charges	N.A
	10) Green Area	HoD, Skin Dept.	N.A
		Support Staff In-charge	
	11) Black Area	Casualty Medical Officer Support Staff In-charge	N.A
		Support Staff In-charge	
	3) Support Services		
	1) Lead	HoD, Lab Dr. Satwana, HOD Microbiology Dr.(Mrs) Saroj Jaswal,HOD Biochemistry Dr.(Mrs.)Vijay kaushal,HOD Pathology	9418470678 9816442345 9418670015
		Support Staff In-charge	
	2) Lab	In-Charge Dr. Kaushal	9418091908
		Blood Bank In-charge	

	3) Radiology	HoD In-charge Dr. Sanjiv Sharma	9816020405
		Support Staff In-charge	
	5) Forensic	HoD, In-charge Dr. A.K. Sharma	9418054702
		Support Staff In-charge	
	6) Psychosocial Care – Social Worker	HoD Dr. Dinesh Sharma	9418028446
		Support staff In-charge – Social Work	-
7. Logistics Section			
	1) Chief	Mr Bhupesh, Planning Officer/ACF	9418950065
		Sh Pranav Negi, Administrative Officer/CFO	9418450603
	2) Communication	Mr Bhupesh, Switchboard In-charge/IT Officer	9418950065
	3) Dietary Services	Dr Rahul Gupta, Procurement Head	7018177484
	4) Housekeeping Services	Mr Baldev, SDO PWD, Civil Engineer/sub-engineers/Technical staff	9418029062
		Mr Baldev, SDO PWD and S.R. Tomar, SDO, PWD, Electrical Engineer/Sub engineers/Technical staff	9418029062 9418435654
	5) Transportation	Smt Neena Shrama, Transportation Officer	9418482718
8. Finance Section			
	1) Chief	Sh. Chander Verma, CEO, RKS (Support In-charge)	9418011720
	2) Procurement	Sh. Chander Verma, CEO RKS	9418011720
	3) Claim officer	Mr Baldev, Cashier	9418800719
9. Planning Section			

	1) Chief	Dr Janak Raj, and Dr Shomin Dhiman - Sr M.S / Administrative Officer (Planning Officer)	9418820100 9418066694
		Dr Yashpal Ranta, Nodal Officer	9418464201
	4) Medicine and Medical Equipment	Dr RAHUL Gupta, Non-Drugs	7018177484
		Dr Rahul Gupta, Drugs	7018177484
	5) Surge Capacity Officer	Smt Kamla Shukla, Patient Tracking officer	9418079093
		Smt. Veena Sen, Bed Tracking Officer	94181841909
	6) Resource Unit Officer	Smt Kamla Shukla, HR Officer	9418079093
10. Security Section			
	1) Chief	Dr Rahul Gupta, In-charge Security	7018177484
	2). Traffic Control Officer	Sh Bhim Singh Guleria, CSO	9418100659
	3). Crowd Control Officer	Sh Devi Ram Sharma, SO	7807004266
	4). Volunteer Management Officer	-	-

The other staff members who are not part of the ICS system of the hospital will be responsible and working together with their concerned departments to help manage disaster emergency in the IGMC.

3. Hospital Emergency Operation Centre (HEOC)

The IGMC will have HEOC in the MS and Principal's Office. In the long term an external, independent HEOC will be planned.

The HEOC shall have the following facilities and amenities:

- Manual for the HEOC (this should be in summarized format and shared with all staff members for quick reference).

- Communication sets –telephones, fixed lines, telephone set, phones, mobiles and wireless communication sets.
- Maps – City and Hospital
- Television
- Computers with internet and printers
- Photocopy machines
- Contact numbers of key persons, both internal and external should be kept in the HEOC.
- Provision for male/female toilet and rest room with adequate facilities
- White board with marker pens
- Back-up generator
- Pantry items
- Seating area for at least six members

VI. Standard Operating Procedures

1. Activating the Emergency Management Plan

Emergencies can be:

1) **Internal** - Fire/ smoke or hazardous materials release within hospital building; Explosion; Violent patients/ armed visitors; Police actions; Other internal and disturbing events such as water failure/contamination, electrical failure, HVAC failure, medical gas failure, steam failure, etc.

2) **External –** Natural hazards (mainly fire, earthquake and windstorms); transport accidents involving mass casualties; epidemics; or other incidents leading to mass casualty.

3) **Combination** - A combination of the above as in a major earthquake where the hospital is affected as well.

Dr Mukand LaL, Principal of IGMC shall be the Incident Commander for all other levels. In case he is not available, Dr. Janak Raj Sr Medical Superintendent will take charge. In case both of them are not available, the third In-charge from the hospital shall be responsible.

Level I

- On receipt of information, HoD, Emergency Department (ED) activates emergency department procedures and be prepared to receive casualties.

Level II

- On receipt of information, IC directs HoD, ED to activate the emergency department to receive casualties.
- ED, HoD activates ED procedures, including staff call back and triage procedures.
- Dean cum Principal activates positions in the IRS as required.
- ED, HoD and activated section chiefs report back on actions taken to the IC
- IC briefs to all section chiefs including HoDs.

Level III

- On receipt of information, IC informs all the section chiefs and activates the emergency operation centre.
- Evacuation orders are given, as required.
- All staff and in-patients are evacuated using identified evacuation routes to designated evacuation area.
- Emergency procedures such as - Staff call back; patient reception and triage (if required); internal and external communication; patient evacuation to other hospitals are activated as required.
- Emergency meeting is held in a prepared location.
- IC along with section chiefs and other relevant IRS positions quickly draw up and agree on an Incident Action Plan (IAP).
- All sections and individuals fulfil their responsibilities under their section chiefs.
- Chiefs of the activated sections report to the IC regularly on actions taken.

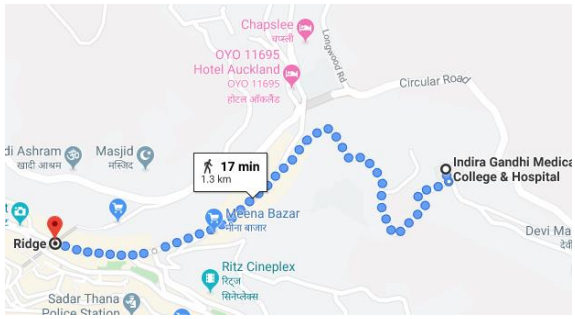
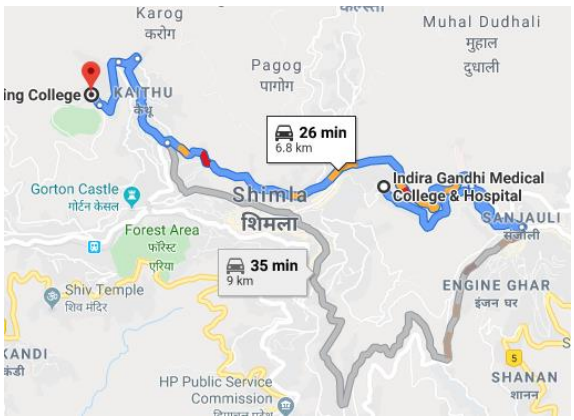
Level IV

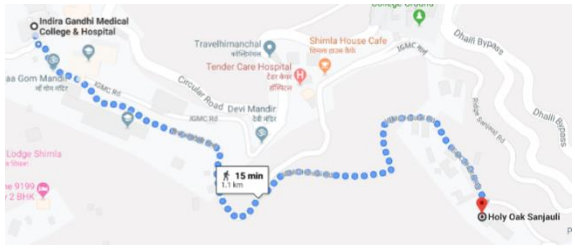
- On receipt of information, IC informs all the section chiefs and activates the emergency operation centre.
- Evacuation orders are given, as required.
- All staff and in-patients are evacuated using identified evacuation routes to designated evacuation area.
- Emergency procedures such as - Staff call back; patient reception and triage; internal and external communication; patient evacuation to other hospitals are activated as required.
- Emergency meeting is held in the HEOC if centre is usable, if not the meeting is held in a prepared location.
- IC along with section chiefs and other relevant ICS positions quickly draw up and agree on an Incident Action Plan (IAP). Medical camps, along with other operational areas are set up in pre-identified locations.
- All sections and individuals fulfil their responsibilities under their section chiefs.
- Chiefs of the activated sections report to the IC regularly on actions taken.

2. Evacuation Procedures

Since the hospital does not have open spaces for evacuation so demarcating evacuation sites is difficult. However, for each floor in each building, an evacuation plan has been developed separately leading to the evacuation site (ES). The IGMC hospital has identified four following evacuation sites for managing mass casualty incident away from hospital's buildings. The four following evacuation sites are quite away from IGMC. These sites have open spaces that can be used by IGMC to treat patients.

1. Ridge Area
2. Sanjauli College Ground
3. Nursing College Ground
4. Doctors Hostel (Holy Oak)

Evacuation Site 1: IGMC to Ridge Route: Through Ridge Sanjauli Road Distance: 1.3 kms Walking time: 17 mins Driving time: 7 mins	
Evacuation Site 2: Sanjauli College Ground Route: via IGMC Rd/Ridge Sanjauli Rd Distance: 950 meters Walking time: 14 mins Driving time: 4 mins	
Evacuation site 3: IGMC to Shimla Nursing College Ground Route: Via circular road Distance: 3.9 kms Walking time: 57 mins Driving time: 26 mins	

Evacuation 4: IGMC to Doctors Hostel (Holy Oak) **Route:** Via IGMC Rd/Ridge Sanjauli Rd and IGMC Hostel Rd Distance: 1.1 kms Walking Time: 15 mins Driving time: 5 mins	

Standard Ward Evacuation Procedure:

Standard ward evacuation procedure given below and additional steps and advice given under Procedure for Natural Hazards in Section VII in this plan document can be used as a reference to develop individual procedures.

- Upon receiving information of an emergency in the ward, the Nurse In-Charge assesses situation and decides to evacuate or not. Nurse In-charge may also order evacuation on receipt of evacuation instructions.
- In case of a fire incident in the ward, the Nurse In-charge shall dial a Code Red.
- In-charge takes stock of available staff, including support staff available for re-assignment.
- In-charge/designated staff member contacts other unaffected wards for patient evacuation support and initiates staff call back, if required.
- Staff takes stock of number of patients and makes preparations for evacuation;
- Patients are segregated as follows:
    - Patients who can walk on their own are accompanied out in groups through evacuation routes to the evacuation site.
    - Infants should be carried by the parents.
    - Wheel chair dependent patients are accompanied out by nursing assistants or ward boys through evacuation routes to the evacuation site.
    - Bed-bound patients.
- For bed-bound patients, Nurse In-charge with required staff should first attempt horizontal evacuation to identified refuge areas and only if there is threat to life, a vertical evacuation will be attempted.
- ICU patients should ideally be accompanied by a doctor.
- Staff ensures all utilities are turned off before evacuating.
- Designated staff accounts for all patients and staff at the evacuation site.

- Nurse In-charge reports back to IC on actions taken.
- HoDs and In-charges should dissemination their ward or department evacuation procedures to all concerned staff.
- Each ward (units and offices) should display their evacuation routes and sites.
- Procedures must be tested through simulation exercise or ward/departmental drills, at least twice a year and the procedures updated on a regular basis.

3. Mass Casualty Management Procedures

3. a. Surge Capacity Procedures

Surge capacity is the ability of a health service to expand beyond normal capacity to meet increased demand for clinical care. Surge capacity requires both increase in human resources and increase in bed capacity.

I. Increase in human resources:

Under the direction of the Incident Commander depending on the level of emergency, the Operations Chief, will assess and direct all section chiefs to call back staff as required. Department Heads/ In-charges may also initiate staff call back in an emergency situation.

All Department Heads and In-charges shall ensure that staff shift system (roster) is in place before hand and that they make the roster available to the Telephone operator on a weekly basis.

During emergencies, the HoDs or In-charges shall:

- Call the receptionist /Telephone operator to initiate staff call back and inform the reporting area. The operator shall call back (or use other means of communication installed in advance such as mobile SMS or WhatsApp groups staff based on the shift system.
    - Staff designated for the immediate next shift shall report immediately.
    - The next shift should come in after 6 hours of the emergency
- Brief and assign tasks to reporting staff.
- Review and update staff roster as per the emergency requirements.
- Ensure staffs have adequate amenities and the required rest.
- Observe and manage stress.

To support IGMC staff, HR will have pre-agreements with staff from Medical College (also senior students), and other hospitals such as Kamla Nehru Hospital Shilma (Government), Deen Dayal Hospital (DDU) Shimla (Government), Tenzin Hospital Shimla (Private), Jatog Army Hospital to assist in case IGMC hospital is overwhelmed.

IGMC will mobilise resource from the following nursing colleges that have been identified.

List of Nursing Colleges and Schools:-

1. Sister Nivedita Govt Nursing College IGMC, Shimla
2. Shivalik Institute of Nursing College Chhiber complex Kamla Nagar Sanjauli Shimla
3. Akal College of Nursing Barw Sahib
4. Lord Mahavir Nursing College, Swarghat Nalagarh
5. Jakh Institute of Nursing Rampur
6. Abhilashi College of Nurisng Mandi
7. Murari Lal Memorial School and College of Nursing
8. Modern Nursing College Annadale Shimla
9. Shimla Valley Nursing College Kamla Nagar, Sanjauli Shimla
10. Maa Janki School Hira Nagar Hamirpur
11. Chamunda Institute of Nursing School Kullu
12. Dr YSPGMC Nursing School Nahan
13. Bhojia Institute of Nursing School Baddi Solan

II. Increasing in-patient bed capacity (Surge Capacity)

Bed capacity may be increased through the following options:

1. Option 1

Discharging non-critical patients using 'reverse triage' by identifying hospitalized patients who do not require major medical assistance. These patients could also be transferred out to other nearby hospitals such as Deen Dayal Upadhyay (DDU), Kamla Nehur State Hospital (KNH) etc. or allowed to go home.

2. Option 2

IGMC hasworked out to extendthe current bed capacity in the existing wards and other areas in the hospital, as estimated below, in case of disaster incident.

2.1. List of Hospital Complement and Non Complement Bed's

Sr	Wards	Complement beds	Non-complement beds
1	S. Sp. Ward	27 No's	27 No. Attendant bed's
2	Thalacemia Room	03 No's	03 No. Lithotripsy
3	S. S. S. Ward	51 No's	
4	F. Paediatric Ent Wd.	12 No's	
5	Med. Ch. Ward	98 No's	
6	Paediatric Surgery Wd.	12 No's	
7	CTVS ICU	06 No's	18 No's Main OT Recovery Room

8	Cardiology Ward	25 No's	02 CTVS Recovery Room
9	M & F Surgery Unit IV	31No's	
10	M & F Surgery Unit III	33 No's	
11	M. S. Unit I	30 No's	
12	M. S. Unit II+III	23 No's	
13	F. S .Ward I+II	36 No's	
14	G.ICU	06 No's	
15	Renal Unit	07 No's	02 day care
16	Med Spl. Ward	13 No's	06 Attendant Bed's
17	M. Ortho Ward	35 No's	
18	F. Ortho & F.EYE& ENT Ward	46 No's	
19	M.EYE & ENT Ward	43 No's	
20	M. Med Unit II+III	39 No's	
21	F. Med Unit I+II+III	44 No's	
22	M. Med I+IV	35 No's	
23	Med CCU	06 No's	
24	F. Med Unit IV	16 No's	
25	RICU Ward	04 No's	
26	Pulmonary Ward	30 No's	
27	Skin Ward	30 No's	
28	Psychiatry Ward	30 No's	
29	MDR Ward	04 No's	
30	Radiotherapy Ward	43 No's	21 Chemotherapy Day
31	Renal Transplant Unit (ICU)	02 No's	
32	Causality Trauma Ward	20 No's	
33	HDU	04 No's	02 No Recovery Bed Emergency
34	EMD	20 No's	02 No Trolley Uro. OT
35	Isolation (Surgery)	01 No's	036 No Observation Trolleys
		873 No's	119 No's
		ENT Sanction Bed's=847/26 Bed's Ext.	

2.2. List of extended bed capacity:

Area	Wards	Current bed strength	Max extendable bed capacity	Max bed capacity after addition	Current nursing staff strength	WS	SN
Surgical Special Ward	Special Ward Rooms	29			**3** Nsg. Sister+ **10** Staff Nurses	02	07
	Thalacemia Room	03					
Super Surgical Specialty Ward	CTVS	13					
	Neuro Surgery	12				03	17
	Plastic Surgery	12					
	Uro Surgery	12				02	06
	Pediatrics Surgery	09					08
Children Ward		62			**4** Nsg. Sister+ **14** Staff Nurses	04	18 +7(HL L)
Pediatric ENT Ward		12			**4** Nsg. Sister+ **21** Staff Nurses	01	06
CTVS(ICU)		06			**2** Nsg. Sister+ **7** Staff Nurses	2	10
CTVS OT					**3** Nsg. Sister+ **13** Staff Nurses	2	10

Cardiology Wards	Female Cardiology Wards	06			**4** Nsg. Sister+ **26** Staff Nurses	2	19
	Male Cardiology Wards	06					
	New CCU	09					
	Post Cath CCU	04					
Causality OPD		11			**5** Nsg. Sister+ **15** Staff Nurses	04	22
Trauma Wards		10			**4** Nsg. Sister+ **11** Staff Nurses	03	11
Causality Wards		18					
HDU		04			**2** Nsg. Sister+ **10** Staff Nurses	02	11
Surgical Wards	Male Surgical Unit I	23			**3** Nsg. Sister+ **07** Staff Nurses	02	08
	Female Surgical Unit II	29					
Surgical Isolation Ward		01					
Female Surgical Ward I & II	Female Surgical Ward I &III	18			**03** Nsg. Sister+ **11** Staff Nurses	02	12

	Female Surgical Unit II + Male Surgical Unit II	18				02	10
Surgical Unit IV	Male Unit IV	12			**03** Nsg. Sister+ **10** Staff Nurses	02	10
	Female Unit IV	19					
Surgical Unit III Male and Female	Male Unit III	15			**03** Nsg. Sister+ **10** Staff Nurses	02	08
	Female Unit III	17					
Operation Theater Recovery Beds	Surgical Recovery	07				07	24
	CTVS Recovery	09			**03** Nsg. Sister+ **10** Staff Nurses		
	GICU	02			**02** Nsg. Sister+ **18** Staff Nurses	02	14
	Ortho Recovery	06					

Medical Special Ward	Special Ward Rooms	06			**04** Nsg. Sister + **17** Staff Nurses	03	06
	Doctors Sick Rooms	01					
	Students Sick Rooms	03					
Wards	Nurse Sick Room	03					
	Female Employee	03					

	Sick Room						
Renal Unit		07			**02** Nsg. Sister + **11** Staff Nurses	02	07
Renal ICU						01	07
Male Ortho Ward		35			**03** Nsg. Sister + **09** Staff Nurses	02	09
Female Ortho and EYE and ENT Wards	Female Ortho Ward	21			**04** Nsg. Sister + **12** Staff Nurses	02	09
	Female EYE Ward	18					
	Female ENT Ward	07					
Male EYE and ENT Wards	EYE Ward	25			**03** Nsg. Sister + **09** Staff Nurses	02	07
	ENT Ward	18					
Medical CCU		06					
Medical Ward II & III	Male Medical Unit II	19			**04** Nsg. Sister + **12** Staff Nurses	02	10
	Male Medical Unit III	20					
Medical Ward 1 & IV	Male Medical Unit I	20			**04** Nsg.	02	10

	Male Medical Unit IV				Sister + **10** Staff Nurses		

Female Medical Ward I & II	FMU 1		**04** Nsg. Sister+ **10** Staff Nurses			
	FMU II				03	13
	FMU III					
& III	Extra Beds	3				
Female	FM Unit IV	16	**03** Nsg. Sister+ **07** Staff Nurses		01	
Medical Unit IV	Swine Flu Ward RICU	06			01	07
Pulmonary Medicine Ward		30	**03** Nsg. Sister+ **14** Staff Nurses		02	10
Skin Ward		30	**03** Nsg. Sister+ **07** Staff Nurses		01	05
Psychology Ward		30	**03** Nsg. Sister+ **08** Staff Nurses		01	06
Radiotherapy Ward	Chemotherapy Wards	17	**03** Nsg. Sister + **08** Staff Nurses	**02** Nsg. Sister+ **07** Staff Nurses in Chemotherapy day Care		02 09
	Radiotherapy Wards + RTH OT	42		**03** Nsg. Sister in OT Radiotherapy		03 09 + 02 OT
Med CCU		06				02 09
MDR		04				01 05
ICN						02
Endoscopy						01
CT Scan						01
Med + Surgery OPD						01 02
Ortho Minor O.T.						01 01
Physiotherapy						01
ENT OPD						01

EYE OPD				01

3. Option 3:

IGMC has also planned to extend the current bed capacity in the existing wards and other areas in the hospital such as emergency wards in nursing, labs, auditorium, seminar hall/rooms and conference hall etc.

3. b. Patient Reception, Triage and Treatment Procedures

In case if the buildings of the IGMC do not remain functional, the hospital will manage to move to the evacuation sites identified above. All the required medical treatment will be carried out there. However, IGMC has following plan for managing mass casualty event considering the scenario when hospital's buildings are safe and functional.

3. b. 1. Operational Areas

- Patients will be unloaded from ambulances (or guided to the area by security personnel in case of patients walking in or brought in by private vehicles) and taken into the patient reception area.
- Triage nurses (posted according to the anticipated number of patients) will carry out triage - 1) Red - for urgent cases/ Priority 1; 2) Yellow - for less urgent cases/ Priority 2; 3) Green - for minor injuries/ Priority 3; and 4) Black - for the dead.
- Triage nurses/ registration officers will systematically register and record patients. Existing Triage Registration forms should be used for collecting information.
- Triage nurses will direct patients to appropriate treatment areas according to triage category.

3.b.2. Triage and Admission

A triage area will be set up in the emergency department (Block 3) and the staff will be trained. The triage will be done on the following basis.

3. b. 3. Patient Treatment Area Procedures

- **Patient Resuscitation area (Red Tag Area)**

- This area is for the Priority 1 or urgent cases requiring immediate medical attention, stabilization and transfer for surgery. The red tag area will be in or nearest to the Emergency and will be handled by the Emergency Department.

- The Emergency store that is near the Emergency Department will ensure to have medical supplies at all times to cater up to 50 incoming patients at a time.
- The Emergency Department team takes over patients from Triage nurses
- Administer medical care to stabilize, admit to ward or transfer for surgery

- **Patient Observation Area (Yellow Tag Area)**

- This area is for Priority 2 or less urgent patients and will be located near the Emergency department.
- The yellow tag area will be handled by the Orthopaedic department.
- The Ortho Department team takes over patients from triage nurses and administers medical care as required and stabilizes patients.
- In case patients require surgery, Ortho team will hand over to Red tag area

- **Minor Treatment Area (Green Tag Area)**

- This area is earmarked for the "walking wounded" or patients with minor injuries (Priority 3).
- The green tag area will be handled well by the skin department as it will involve minor procedures. Skin department will be assisted by the Medical department.
- The triage nurses will direct the patients to the red tag area.
- The Skin Department team administers medical care, upgrades patient priority if required or sends patients back home.

- **Area for the dead bodies (Black Tag Area)**

The mortuary should be used for keeping the dead bodies. This will ensure that the identification of the dead is smoother. The Forensic unit and support service In-charge will be responsible for the registration and release of body in coordination with the HP Police and as per established protocol and as per the job responsibilities.

- **Operation Theater**

Operation theatres will be made available during emergencies and all elective and routine surgeries cancelled to ensure OTs are available for emergency patients. The Surgery and the Anaesthesiology department will be present in the OT for carrying out emergency procedures.

- **Area for the families**

The area near emergency department entrance has been earmarked as a waiting area for the families. Also, the area used for car parking by faculty members will be cleared in order to use it for visitors, families and relatives.

- Security personnel shall direct the families to the designated waiting area.
- Public Relation Officer in coordination with Logistics Chief will ensure a family information site in the area.

- Safety and security officer/ personnel ensure waiting area is safe and families are not moving to critical and unsafe areas.

- **Area for VIPs and media**

The MS office and Principal office in the hospital has been identified for VIPs and also for media personnel. Under the directives of the Incident Responder, the PRO will be responsible for ensuring VIPs and media receive update and accurate information, as required.

3.b .4 De-activation of Plan and Post-disaster de-briefing

- Incident Responder and section chiefs discuss and deactivate the emergency plan if convinced there would be no more casualties or feel that the situation is under control.
- Incident Commander holds post-disaster de-briefing with all the section chiefs and other staff involved to discuss any gaps, issues and challenges faced during implementation and update plan to deal with future emergencies.
- After Action Report (AAR) is written up and shared with all the staff. The Planning team should document the entire incident to support the AAR.

VII. Standard procedures for natural hazards in the hospital

1. Procedures for fire prevention and during fire outbreak

i). Fire Preparedness and Mitigation

- Instructions for fire prevention should be formulated and communicated to all hospital staff, especially preventing electrical and LPG related fires through proper and mindful use of related appliances.
- Hospital premises should be assessed for fire hazard and necessary preventive actions taken. The assessment will bring out the high fire hazard areas and the need to implement risk reduction actions.
- Evacuation areas and routes should be identified and marked.
- Entry and Exits in all the hospital buildings should be marked and open at all times.
- Corridors and exits should be clear of equipment and furniture so that they do not block evacuation routes or exits during emergency.
- Adequate fire extinguishers, fire hydrants and smoke/ heat detectors and fire sprinklers should be installed and proper maintenance of the equipment and machinery ensured. Monthly fire extinguisher maintenance checklist and record provided below may be used.
- Keep emergency contact number of Fire Brigade (101).
- All staff should be aware of procedures to follow in case of a fire alarm or receipt of information of a fire outbreak (including shutting down of medical gas, air conditioning and other systems).

- All telephone calls must be terminated immediately after a fire alarm is activated unless they deal specifically with the alarm, so as not to waste time and be alert for instructions.
- All staff must be trained to use fire equipment.

ii). Procedures during Fire Outbreak:

In case of detecting any fire, follow the RACE procedure:

R – Rescue (rescue anyone including yourself or anyone who is in immediate danger to the closest safe area)

A – Alarm (if you are the first person to hear it, communicate to others)

C – Confine (confine the fire to where it is by closing all doors (not locking) in and around the fire area, after ensuring no one is trapped)

1. In case fire is detected

a) If the fire is in the early stages:
   - Remain calm and activate hospital alarm system (break glass and sound alarm)
     - Fire safety unit is alerted and will respond
   - Trained staff should use nearest fire extinguisher to extinguish fire.
   - Initiate Code Red by / Inform Incident Commander
     - The reception / attendant calls the following:
       - Medical Superintendent (or Administrative officer in case MS is unreachable
       - Fire Brigade (101)
       - Staff call back, as required
   - Ready patients for horizontal evacuation.

b) If fire is well developed:
   - Remain calm and activate hospital alarm system (break glass and sound alarm)
     - Fire safety unit is alerted and will respond
   - Initiate Code Red by dialing/ Inform Incident Commander
     - The receptionist / attendant calls the following:
       - Medical Superintendent (or Administrative officer in case MS is unreachable)
       - Fire Brigade (101)
       - Staff call back, as required
   - Initiate evacuation procedures. In case fire safety officer arrives at the scene, follow his/her instructions.
   - While leaving - leave lighting on; turn off oxygen, gases and electrical appliances and contain the fire by closing the windows and doors of the room.

- If possible, collect medical records, patient notes etc. and take to the evacuation area, however the priority is to evacuate as quickly as possible.
- Do not use lifts.
- If there is heavy smoke, crawl to the exit, so that poisonous smoke is not inhaled.
- In case your clothes catch fire – Stop, Drop and Roll.
- For ambulatory patients give blankets to cover their body and head and take along lifesaving equipment if convenient and accessible.
- Return back to the evacuated area only when instructed by fire safety officer or senior staff.

QUARTERLY MONTHLY FIRE EXTINGUISHER CHECKLIST:

The following items shall be checked on all fire extinguishers at the facility and documented. If there is a fire extinguisher on site that does not pass the monthly inspection, notify the Fire safety unit IGMC immediately. All fire extinguishers are to be marked for ease of maintenance and testing.

Interior Extinguishers:

- Mounted in an easily accessible place, no debris or material stacked in front of it.
- Safety pin is in place and intact. Nothing else should be used in place of the pin.
- Label is clear and extinguisher type and instructions can be read easily.
- Handle is intact and not bent or broken.
- Pressure gauge is in the green and is not damaged or showing “recharge”.
- Discharge hoses/nozzle is in good shape and not clogged, cracked, or broken.
- Extinguisher was turned upside down at least three times (shaken)

Exterior Extinguishers:

- Discharge Hose/nozzle is in good shape and not clogged, cracked, or broken
- It is mounted in an easily accessible area, with nothing stacked around it.
- Safety Pin is in place and not damaged.
- Pressure gauge is in the green and not damaged or showing “recharge”.
- Label is readable and displays the type of extinguisher and the instructions for use.
- It is not rusty, or has any type of corrosion build up.
- Extinguisher was turned upside down at least three times. (Shake)
- The location of the extinguisher is easily identifiable. (Signs)

QUARTERLY FIRE EXTINGUISHER INSPECTION RECORD

(Record all deficiencies on the monthly plant inspection to be turned into the Fire Safety Unit, IGMC)

January Total # of Extinguishers onsite: _____ All have been inspected: YES NO All passed inspection: YES NO # Did not pass:_____ Notified Fire Safety Unit: YES NO	**April** Total # of Extinguishers onsite: _____ All have been inspected: YES NO All passed inspection: YES NO # Did not pass:_____ Notified Fire Safety Unit: YES NO	**July** Total # of Extinguishers onsite: _____ All have been inspected: YES NO All passed inspection: YES NO # Did not pass:_____ Notified Fire Safety Unit:. YES NO	**October** Total # of Extinguishers onsite: _____ All have been inspected: YES NO All passed inspection: YES NO # Did not pass:_____ Notified Fire Safety Unit: YES NO

2. Procedure for earthquake preparedness and response

i. Earthquake mitigation and preparedness

- Conduct hazard and vulnerability assessment for earthquakes to identify structural and non-structural risks and measures for mitigation and preparedness.
- Fix and anchor equipment, furniture and fixtures on a prioritized basis to prevent and reduce risks from falling hazards.
- Clear all exits, doorways and corridors, especially the identified evacuation routes, to ensure smooth evacuation when required.
- Draw up evacuation procedure and identify evacuation routes and sites for each ward/ department and building.
- Put in place pre-agreements and arrangements for backup communication and emergency utilities such as water, gas, power, fuel etc.
- Ensure provisions for outdoor hospital, in case hospital buildings are damaged and non-functional.
- Store few necessary emergency items (such as emergency light, batteries, etc.) in each ward.
- Make staff aware of hospital's emergency preparedness plan, the key protective actions to take during an earthquake and procedures for evacuation.

ii. During Earthquake

- During shaking all staff, patients and attendants get under their beds or under sturdy furniture to take cover and hold on (Drop, cover and Hold). Patients or attendants should not start running out as this could lead to a stampede and injury from falling objects. Staff member will firmly instruct people to remain calm.

DROP
Drop where you are, onto your hands and knees. This position protects you from being knocked down and also allows you to stay low and crawl to shelter if nearby.

COVER your head and neck with one arm and hand
If a sturdy table or desk is nearby, crawl underneath it for shelter
If no shelter is nearby, crawl next to an interior wall (away from windows)
Stay on your knees; bend over to protect vital organs

HOLD ON until shaking stops
Under shelter: hold on to it with one hand; be ready to move with your shelter if it shifts.
No shelter: hold on to your head and neck with both arms and hands.

- Patients who are bed/wheelchair bound will be instructed to protect their head with a pillow or their hands.
- Staff checks if earthquake has caused any injuries to their patients or attendants in their ward and provides necessary first aid.
- Prevent panic among the patients and attendants.
- Staff on duty determines whether evacuation is necessary depending on the intensity of shaking.
- In case evacuation is necessary, put off the medical gas supply and any electrical appliances.
- One staff conducts rapid assessment of evacuation routes for safety before leading patients and attendants through the evacuation routes to the evacuation sites as per the earthquake evacuation procedure.

While evacuating:

  - Tell patients and attendants not to carry their personal belongings.
  - Use stretcher to evacuate patients suffering from serious medical conditions to the evacuation site.
  - Vertical evacuation may be necessary during an earthquake to an outside area and you must use the stairways and ramps that are safe for evacuation (stairways and ramps need to be checked for safety by a staff member before evacuating patients).Never use a lift after an earthquake.
  - Staff should ensure that the building thorough-fares are safe and open the doors to secure an exit.

- Keep away from buildings and fallen power lines in the evacuation site. Stay away from building elements, damaged trees and power lines.
- Once evacuation is complete, count number of patients and staff members and report to the Incident Commander on actions taken.
- Return back to the evacuated area only when instructed by IR or senior staff.

3. Procedure for disease outbreak

a. Disease outbreak reported outside the country

- Implement hospital surveillance
- Reinforce infection control measures in the hospital
- Accelerate the training of the staff

b. Disease outbreak in the country

- Identify when cases began in the community
- Ensure isolation rooms are available
- Identify, isolate, and treat all patients with potential disease
- Supplement staff shortages and provide medical supplies and equipment
- Activate family information area
- Place Checklist/graph/chart /diagram in ER and admission for quick reference

c. External Communication

- The medical director will work with public health officials, other government officials, the lay public, and the press to ensure rapid and ongoing information sharing.

d. Internal Communication

- For internal communication, there should be meeting of all the heads of departments, heads of divisions who in turn will inform the personnel working under them.

e. Education and Training

- The focal persons responsible for implementing education and training of the hospital staff and also the contingency staff will be the superintendent.
- General topic for staff education should include:
  - Prevention and control
  - Modes of transmission, treatment, vaccination
  - Role of drugs in preventing and reducing severity and complications
  - Dispose of appropriate PPE in triage and admission areas

Hospital-specific topics for staff education

- Policies and procedures for the care of the patients
- Staffing contingency plans, including how the facility will deal with illness in personnel
- Policies for restricting visitors and mechanism for enforcing these policies
- Measures to protect family and other close contacts from secondary occupational exposure
- Train ED staff and triage staff to detect disease and to implement immediate containment measures to prevent transmission
- Hospital should conduct seminars, tabletop exercise and drill in a continual basis in order to test the SOP. They should be documented and critiqued. Each implementation and drill or exercise shall be followed by the development of an After Action Report (AAR). The AAR will be shared with the Hospital Disaster Management Committee.
- Staff required to respond are continually trained and evaluated. Ensure that training includes all routine actions (Gloves wear, use of personal protective equipment) as well as the use of specialized equipment required for use or operated (Decontamination).

Strategy to train students of medical college to assist clinical personnel and other medical staff who are not practicing the profession, will be developed.

Patients, family members, visitors and others should be educated so that they know what they can do to prevent the disease transmission in the hospital, as well as at home and in the community.

f. Healthcare Facility Access

In the event of a pandemic situation, where the health facility is overwhelmed with patients, the medical director will issue:

1. Directives to stop new admission of patients
2. Discharge patients who are not seriously ill
3. Cancel all elective, routine or non-essential operations
4. Cohort patient in one ward to empty ward
5. To use the satellite clinics for chronic patient and for refill of medicine
6. The Ministry will issue orders to district hospitals not to refer patients
7. Restrict visitors to ward

g. Occupational Health

- Consider prophylaxis for staff or vaccination

- Ensure adequate supply of PPE in the hospital

- Pregnant and immune-compromised healthcare workers will not be assigned duty to care for influenza patients.

- Healthcare workers who are ill will be checked by a medical officer and treatment provided.

4. Procedure for Waste Management

Managing adequately waste (solid as well as liquid) inside of the hospital minimizes the potential risk of acquiring nosocomial infections (Hospital-acquired infections), which could be a burden for the hospital. The hospital should have an Infection Control Unit to take care of both solid and liquid waste.

- A standardized colour-coding trash bin should be strictly established in each department

-Solids are disinfected using an autoclave machine in the hospital.

- There is need for a treatment plant to filter liquid waste evolving from laboratory, morgue, imaging areas before the final evacuation to the public sewage.

VIII. Water system: -

The Irrigation and Public Health Department (IPH) is supplying water to Municipal Corporation Shimla in bulk. M.C. Shimla does the distribution of water in entire Shimla. There is metric distribution system of water in place. There are six water stations which provide supply to entire Shimla: Sanjauli, Chhota Shimla, New Shimla, Central Zone, Lakkar Bazar, Chaura Maidan. There are two big water storage tanks at the Ridge and Sanjauli which are used for bulk water storage and supply. An assessment of the earthquake resilience of water pipelines and water tanks are beyond the scope of this assessment.

At IGMC, the water tanks store about 554800 litres. WHO recommends that hospitals have in-campus storage of water of three days' supply calculated at the rate of 300 litres daily per bed capacity of the hospital. For IGMC, this works out to (800x300x3 =) 720,000 litres. Therefore, the IGMC currently has a shortfall of 165,200 litres of emergency water storage compared to accepted standards for water storage. The storage tanks in the hospital and the total capacities are listed below.

DETAIL OF WATER STORAGE CAPACITY OF IGMC

LOCATION	SIZE IN MTRS.	NO. OF TANKS	CAPACITY IN LTRS.	WATER CATER TO	REMARKS
BEHIND NURSING HOSTEL TANK	RCC 80000	1	80000	A & B BLOCK	CLEANED
MAIN TANK AT ENTRANCE	RCC 75000	1	75000	A & B BLOCK	CLEANED
TANK BEHIND MAIN ROAD	RCC 100000	1	100000	A & B BLOCK	CLEANED
ABOVE C BLOCK	MS 1800	10	18000	C BLOCK	CLEANED
BEHIND E BLOCK	MS 1800	1	1800	E BLOCK	CLEANED
	PVC 5000 LTRS.	1	5000		CLEANED
ABOVE D BLOCK	MS 1800	1	1800	D BLOCK	CLEANED
RDH HOSTEL	MS 1800	5	9000	RDH	CLEANED
	PVC 1000 LTRS.	1	1000		CLEANED
ADMN. BLOCK & BEHIND AUDITORIUM	PVC 5000 LTRS.	3	15000	MEDICAL COLLEGE	CLEANED
	MS 1800	3	5400	AUDITORIUM & CANTEEN	CLEANED
	MS 1800	3	5400	FORENSIC & ANATOMY BLOCK	CLEANED
BEHIND NURSING PUMP	PVC 1000 LTRS.	2	2000	CANCER HOSPITAL	CLEANED
NEAR NURSING PUMP	MS 1800	6	10800	NURSING HOSTEL	CLEANED
BEHIND NURSING HOSTEL TANK	MS 1800	15	27000	NURSING & DOCTORS HOSTEL	CLEANED
	PVC 2000 LTRS.	3	6000		CLEANED
DENTAL	MS 1800	8	14400	DENTAL COLLEGE BLOCK A & B	CLEANED
	PVC 1000 LTRS.	2	2000		CLEANED
PRINCIPAL OFFICE	MS 1800	2	3600	PRINCIPAL OFFICE	CLEANED
CHROSTOPHON	MS 1800	25	45000	CHROSTOPHON RESIDENTIAL BUILDINGS	CLEANED
	PVC 1000 LTRS.	15	15000		CLEANED
M D H BLOCK A, B & C	MS 1800	6	10800	M D H BLOCK A, B & C	CLEANED
HOLLYOAK RESIDENCES	MS 1800	9	16200	HOLLYOAK RESIDENCE	TO BE CLEANED
	PVC 2000 LTRS.	6	12000		CLEANED
HOLLYOAK PUMP HOUSE	MS 1800	10	18000	HOLLYOAK RESIDENCE, RAMAN & BHABHA HOSTEL	CLEANED
	PVC 5000 LTRS.	1	5000		CLEANED
BEHIND RAMAN & BHABHA HOSTEL	MS 1800	18	32400	RAMAN & BHABHA HOSTEL	TO BE CLEANED
NEAR UNDER CONSTRUCTION GREEN HOUSE	PVC 5000 LTRS.	2	10000	KEIMOTHERAPY WARD	CLEANED
ABOVE KEIMOTHERAPY WARD	MS 1800	4	7200	KEIMOTHERAPY WARD & NURSING HOSTEL	CLEANED
TOTAL WATER CAPACITY			554800		

In addition to increasing reliable water storage capacities within the hospital, it is important that the HPPWD develops a Disaster Water Supply Plan (DWSP). Broadly, the development of the DWSP involves the following steps 1. Understand the water usage (under normal conditions) for various functions, services, and departments within the hospital. 2. Discuss with the hospital's Disaster Management team and identify which functions are critical to patient health and safety, and which functions can be temporarily stopped in the event of a water supply interruption after a disastrous event.3. Develop reasonable estimates of the quantity and quality of water required to continue operation of the critical functions and to meet the 18 emergency needs of IGMC.4. Identify existing and alternate sources by which the emergency needs as per quality and quantity required will be managed.

IX. Electricity System –

The main source of electricity is a Hydro Power Plant located at Bhabha, Giri and Nabha. There is a Grid System available in Totu with six substations located at Bharari, Eid gaah, Khalini, Totu, Summer Hill and Sanjauli. There are many generators dedicate to provide electricity in different blocks of the hospital. Failure of electricity supply may be caused by extreme events causing damages to transmission lines.

As generators are the lifelines for keeping hospitals functional and care must be taken to ensure that generators are completely equipped to resist the lateral forces on it during earthquake shaking as the hospital will need to rely on backup power for several days. However, the generators and backup power system in the hospital are vulnerable to earthquake damage that could prevent them from supplying the hospital with power when it is needed most. The list of Generators and the departments served are listed below. An assessment of the earthquake resilience of electric sources / generator is beyond the scope of this assessment.

LIST OF DG SET INSTALLED IN IGMC AND HOSPITAL ANG KNH UNDER ESD HPPWD IGMC SHIMLA							
SrNo	description	location	Area Coverred	consumption of diesel	fuel storage capacity	Automatic mains Failure (AMF)	Remarks
1	100 KVA D G SET	block A	Block A at IGMC	22 litre	200 litre	yes	proposal to replace with 320 KVA DG set Is submitted
2	320 KVA DG SET	block B	Block B at IGMC	51 litre	480 litre	yes	
3	25 KVA DG SET	Block B	PICU ward at IGMC	6 litre	40 litre	yes	
4	250 KVA DG SET	Block D	Block C ,D and E at IGMC	32 litre	400 litre	yes	
5	100 KVA D G SET	Cancer hospital	Cancer hospital	22 litre	200 litre	yes	
6	100 KVA D G SET	Medical College	medical college at IGMC	22 litre	200 litre	yes (not required as only one shift working	
7	160 KVA D G SET	KNH for Mother and Child	OPD block at KNH (excluding NBN section	26 litre	400 litre	yes	
8	25 KVA D G SET	KNH	NBN section of KNH for mother and child	6 litre	40litre	yes	
9	100 KVA D G SET	Dental College	Dental college	22 litre	200	yes (not required as only one shift working)	

Addition one day reserve of diesel is available all the time for all the DG. Sets.
Maximum 1000 lit) we can store as per fire safety norms.

The fuel consumption is as below:

According to this fuel requirement, the total consumption of fuel if all nine generators in the hospital are working will be about 4.78 litres per hour (1000 total diesel / 209 total consumption per hour). Currently, the campus keep just 1000 litres fuel in storage in addition to the fuel in the generators. This will hardly be enough to keep the hospital functional for a maximum of 5 hours. The actual fuel consumption of the

generators per hour may vary and this will be important information that will help determine the storage requirements.

In normal times, diesel is brought from nearby petrol pump (20 minute drive) from Sanjauli, but these may not be functional or accessible in a post-disaster scenario. It is extremely important to have adequate diesel in storage to run the critical facilities of the hospital for at least 72 hours after which either external power supply is restored or additional fuel is made available.

Planning - The hospital will have to develop a detailed Disaster Power Supply Plan (DPSP) for extended power outages if it expects to be able to serve the community after an earthquake. Ideally, this plan will be developed in meetings between the Hospital Disaster Management Committee (or other similar existing committees) and the electrical department staff members, detailing out the services that should be functional in a post-earthquake scenario, and the electrical department planning out on the generators that will have to be functional and the fuel requirements thereof. Development of the plan, called the Disaster Power Supply Plan (DPSP) involves the following steps1. Understand the electric power usage (under normal conditions) for various functions, services, and departments within the hospital. 2. Discuss with the hospital's Disaster Management team and identify which functions are critical to patient health and safety, and which functions can be temporarily stopped in the event of an electricity supply interruption after a disastrous event.3. Develop reasonable estimates of the electricity need to continue operation of the critical functions 4. Identify existing and alternate generators by which the hospital can meet the emergency needs. 5. Identify fuel, staffing needs in emergencies. 6. Understand the disaster management plan of the external power supplier and ensure the DPSP aligns with it. As per the DPSP and the anticipated need for fuel, new storage tanks will have to be located and designed for earthquake resistance.

X. General Recommendations

- It is recommended that a dedicated comprehensive assessment of fire safety be carried out in all buildings of the IGMC. All the blocks of IGMC should have fire extinguishers installed at strategic locations of the hospital. The hospital should have data on the procurement and the maintenance of the fire extinguishers. Assign serial numbers to all fire extinguishers and develop a maintenance and testing schedule. Staff training with live extinguishers can coincide with the dates of refilling of extinguishers.
- The early detection of fire and/or smoke is a critical line of defence against fire in hospital. The hospital should have equipment and adequate installations for early detection, controlling and extinguishing of fires in areas of high risk (pharmacy, sterilization units, laboratories etc.) and unmanned areas including smoke alarm system, fire extinguishers, functional water hydrants or dry risers. All aspects of these systems should be tested on a regular basis.

- Ideally, smoke detectors and fire alarms should be part of a central system with a Fire Alarm Control Panel at a constantly manned location such as the Security cabin/ Emergency department, etc. Hospital should Install florescent and glow in the dark signage.
- The hospital should conduct disaster safety preparedness-drills every six months involving all staff members in partnership with the Shimla Fire Station.
- All the exits and evacuation routes such as corridors, hallways, staircases and ramps in various parts of the hospital should be free of obstacles or of items that could fall and obstruct occupants. They should have railings so that they can be used safely at their maximum capacity, the stairs themselves should be free from damage and have clearly marked or defined edges keeping in mind that patients will be more vulnerable to falls than typical users.
- IGMC has many expensive medical equipment that will play an important role after a disastrous event. It is recommended to anchor X- Ray and CT scan machines and other equipment, storage cupboards, racks and glass panels etc.
- All the corridors and spaces should have emergency lighting which may create a problem in a night time situation in case of power failure.
- The hospital should procure a siren / loudspeaker that must be mounted at such a location in the hospital so that everyone should be able to hear it in case of disaster emergency. The hospital should procure wireless phone and walkie-talkies for smooth internal communication.
- The exit signage in the hospital are should be pasted on wall and notice board to orient occupants for easy evacuation purposes.
- The Hospital should plan to involve Anganwadi workers, Home guards, civil defense volunteers, red-cross volunteers and also non-government organizations from the state Inter Agency group in its disaster management planning.

Annex A - Job Cards for various IRS designated positions

Incident Commander: The hospital Incident Commander (IC) is to direct all aspects of the hospital's participation in the disaster operation. The effectiveness of the operational hospital is his/her responsibility**.** IC must not be expected to carry out any logistic activities, patients care or any other activity, but must be free to respond and coordinate the overall emergency response.

Reporting to: All Section Chiefs

Reporting Area: HEOC

During normal times

- Ensure that all communication system are in working conditions.
- Monitor preparedness measures including simulation exercises are undertaken by various departments,
- Conduct two simulation exercises and one mock drills annually.

- Direct disaster focal person to update preparedness plan every six months.

During Drill/Emergencies

- Activate the hospital Incident Respond System and organize and direct Emergency Operation Centre (EOC).
- Call for initial action plan meeting of all section chiefs and initiate damage and needs assessments
- Authorize resources as needed or requested by section Chiefs.
- Represent Hospital in emergency meetings and response and recovery meetings at Ministry, City and national level
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Extended Actions

- Approve media releases submitted by the Information and liaison Officer
- Hold press conferences as required
- Direct formulation of after action report and share all staff
- Provide for staff rest period and relief

Information and Liaison Officer: The liaison officer is responsible for maintaining and disseminating incident's information and setting up a close liaison with the other external agencies.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

During normal times

- Set-up information Centre in HEOC (Hospital Emergency Operation Centre) to organize sharing of information with media and community.
- Maintain in-message and out-message register and other means of receiving and recording information

During Drill/Emergencies

- Collect and organize information for HEOC, Ministry, higher authorities and media and issue initial information report to the media on approval of IC.
- Prepare news releases and updates, including casualty status and ensure all the news releases have approval of the IC.
- Establish contact with external concerned agencies (e.g., other hospitals, governmental entities, response partners) to ascertain disaster status, plans, and appropriate contact and reporting procedures.
- Control and regulate media presence and facilitate VIP visits and ensure there is no disturbance to emergency medical operations.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Family Information Officer: The family information officer is responsible for dissemination of all the information, medical or otherwise, to the families/relatives of in-coming patients/disaster victims.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Establish information desk to provide requisite information to the families/relatives of the victims.
- Frequently display the list of casualties with their status at a prominent place in local language.
- Help Liaison/public information officer share information with media.
- Set up sites for the relatives and families of the victims in coordination with Liaison/public information officer and Security officer.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Documentation Officer: The documentation officer is responsible for collecting and organising information and preparing reports of the overall incident.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Document actions and decisions taken by section in-charges.
- Prepare and maintain records and reports as appropriate for internal as well as external uses.
- Help Liaison/public information officer disseminate required information.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Logistic In-charge: This section is responsible for organizing all actions associated with maintenance of the physical environment and adequate levels of food, shelter and supplies to support the ongoing operations.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Hold a meeting with all units head under the Logistics Section to support the action plan
- Requisition for and procure/hire materials, equipment, vehicles, as required and feasible through planning section
- Have close liaison and supervise all support services (switchboard, transportation, dietary and housekeeping)
- Observe all staff for signs of stress
- Report to IC about action taken
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Operation In-charge: This section is responsible for implementation and delivery of required medical services on the ground as per the action plan. The operation in-charge is responsible for all patient care activities and supervise support services (laboratory, radiology, forensic and psychosocial care).

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial plan meeting
- Activate the Emergency Department and other departments upon receipt of information from the IC.
- Hold a meeting with all HoDs under the Operations Section to support the action plan
- Implement operations and coordinate with logistics and planning sections as and when required.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Planning In-charge: The Planning In-charge is responsible for overseeing strategies and tracking and mobilizing resource and human resource requirements.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Coordinate with other section on their resource and manpower, and mobilize staffs if required.
- Increase the bed capacity of the hospital by creating emergency wards, discharging stable recovering patients and stopping admitting non-emergency patients.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Finance In-charge: This section is responsible for monitoring and allocation of emergency funds and facilitating emergency purchase when needed in the course of emergency.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Maintain all related documentation necessary for managing facility record keeping and reimbursement.
- Monitor the utilization of financial assets and the accounting for financial expenditures.
- Supervise the documentation of expenditures and cost reimbursement activities to documentation officer.
- Responsible for receiving, investigating and documenting all claims reported to the hospital during the emergency incident, which are alleged to be the result of an accident or action on hospital property
- Responsible for providing cost analysis data for the declared emergency incident and maintenance of accurate records of incident cost.

- Responsible for administering accounts receivable and payable to contract and non-contract vendors.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Security In-charge: The security In-charge is overall responsible for activating and alerting all security staff and designate them in various areas of the hospital.

Reporting to: IC and all Section Chiefs

Reporting Area: HEOC

- Participate in initial action plan meeting
- Establish Security Command Post
- Establish ambulance entry and exit route
- Secure the EOC, ED and hospital areas from unauthorized access
- Initiate contact with fire or police, through the information and liaison officer when necessary
- Provide vehicular and pedestrian traffic control
- Control entry/movement of crowd/public.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Support Branch Director/ Ancillary Service Section Chief: The officer is responsible for timely providing and managing essential medical as well as non-medical services to help maintain the optimal functionality of the hospital in wake of an emergency.

Reporting to: Operation In-Charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Organize and manage the services required to maintain the hospital's supplies and facilities.
- Ensure the provision of logistical, psychological, and medical support of hospital staff and their dependents.
- Provide for the optimal functioning of Ancillary Services in support of the facility's medical objectives in emergency situation.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Laboratory HoD:

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Ensure adequate collected screened blood (20% more than normal requirements)
- Keep adequate blood bags, reagents and other supplies
- Notify physicians about the availability of blood of different groups in stock.

- Contact potential living donors during emergency as required.
- Outbreak Investigation Response
- Utilize mobile blood bank van to meet the demand of blood
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Radiology HOD:

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Regularly inspect the machines for functionality,
- Keep portable X-ray/USG machine always ready,
- Team leader will coordinate with staff of all units (USG, X-ray, CT and MRI)
- X-Ray films, USG gel and solution will be kept in reserved basis(20% more than normal requirement)
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Forensic Officer: is responsible for ensuring system of identification and medicolegal management of the body of deceased.

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Provide a system or procedures for identifying, endorsing and handing over of the body of the deceased to authorized members of the family.
- Handle autopsies and other medico-legal cases for proper identification and for evidence collection and preservation and coordination with police as required.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Psycho Social Care officer: is responsible for keeping ready all medical supplies and necessary equipment.

Reporting to: Operation In-charge

Reporting Area:HEOC

- Participate in initial action plan meeting
- Provide counselling and psychosocial care to those in need.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Medical Care Officer: is responsible for managing incoming patients, carrying out triage and sending off patients to correct treatment area.

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Establish registration desk for incoming patients
- Carry out triage and tag color coded band according to the kind of treatment they may require
- Direct patients to the correct treatment areas (Red, Yellow, Green and Black)
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Red Area – HoD – This area will preferably be handled by an Emergency Department to treat the patients with urgent cases/ Priority 1.

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Receive patients from the triage team and give the necessary treatment.
- Patient resuscitation team provides immediate medical attention to priority 1 cases.
- Call concerned specialist and transfer to OR/ICU/Ward as required
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Yellow Area – HoD - This area will preferably be handled by an Orthopaedic department to treat the patients with less urgent cases/ Priority 2.

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Receive patients from the triage team and give the necessary treatment.
- Patient observation team will take care of priority 2 cases and provide them with medical care
- Refer to red area if required.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Green Area – HoD - This area will preferably be handled by a skin department to treat the patients with minor injuries/ Priority 3.

Reporting to: Operational In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Receive patients from the triage team and give the necessary treatment.

- The minor treatment team will take care of the “walking wounded”, provide them with medical care and send them home as soon as possible.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Black Area – HoD - This area will preferably be handled by a mortuary department for the dead.

Reporting to: Operation In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Receive patients from the triage team and give the necessary treatment.
- Maintain master list of deceased patients with time of arrival
- Assure that all personnel belongings are kept with deceased patients and are secured;
- Assure that all deceased patients in Morgue Area are covered, tagged and identified when possible;
- Ensure the safety and Security for any morgue security needs;
- Report any concerns to the Operation Officer.
- Unclaimed bodies will be retained in the morgue and announcement made over public media or public address system
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Resource Mobilisation Officer:

Reporting to: Planning In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Ensure that in-charges of different sections are in the different areas of the hospital.
- Maintain information on the status, location, and availability of personnel, teams, facilities and supplies.
- Maintain a master list of all resources assigned to incident operations.
- Keep close liaison with all section in-charges.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Medicine (Medical Equipment) Officer:

Reporting to: Planning In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Keep ready all medical supplies and necessary equipment
- Move to site after receiving the instruction

- Inform Planning in charge about the situation at site, number of casualties and requirement of resources.
- Check emergency kit weekly and manage storage and inventories.
- Mobilize vital and necessary items/Drugs and Non-drug items from other HCCs.
- Collect required items from MSD/ MSPD/local purchase
- Maintain recording and reporting system related to procurement, distribution and mobilization of required items.
- Assure and be equipped with necessary items. (We can give an annexure for Sample Stock Inventory for Disaster Stores)
- Procure additional emergencies request
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Patients and Bed Tracking Officer:

Reporting to: Planning In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Conducting reverse triage of stable patients
- Stop admitting non-emergency patients
- Convert waiting/non-patients care areas into makeshifts wards.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Switchboard Officer:

Reporting to: Logistics In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Establish duty roster system for standby staff
- Identify physicians, nurses and hospital workers who are a) retired, b) have changed hospital, c) working in nearby hospitals etc.
- Liaison with Nursing Superintendent to prepare list of nursing staff who may be made available at a short notice.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Transport Officer:

Reporting to: Logistics In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Manage and deploy ambulances and other vehicles based on the command made by IC.

- Coordinate and ensure alternate transportation arrangements (bus, taxi, public transport) , Armed Forces, schools and other agencies
- Manage fuel and maintenance of vehicles.
- Maintain efficient communication with the IC, administration, and store and with other stakeholders.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Dietary Service Officer: is responsible for preparing to serve nourishment to field workers/health staff and patients, managing catering services in the hospital.

Reporting to: Logistics In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Ensure adequate levels of food for ambulatory patients, in-house patients and personnel as required.
- Ensure that food stockpiles are continually and adequately renewed.
- Utilize additional areas for extra eating space.
- Make arrangement to provide coffee and snacks to the casualty, OT, ED and other designated areas.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

House Keeping Officer: is responsible for organizing all actions associated with maintenance of the physical environment and supplies to support the functioning of the hospital.

Reporting to: Logistics In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Assess critical medical utility systems and buildings for damages and needs for water, power and sanitation requirements.
- Ensure adequate water supply with alternate sources of water such as storage tanks in case of possible breakdown in the normal water supply.
- Ensure the provision of standby generators to provide lights and power to essential areas of the hospital like Emergency Department, OT and ICUs etc.
- Ensure that stockpiles are continually and adequately renewed
- Temporary repair to damaged infrastructure.
- Organize and coordinate debris clearance in hospital buildings and compound.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Procurement Officer: is Responsible for administering accounts receivable and payable to contract and non-contract vendors

Reporting to: Finance In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Ensure proper accounts receivable and payable to procured/hired materials, equipment, vehicles etc.
- Allocate emergency funds when required
- Facilitate emergency purchases if required in course of the emergency.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Claim Officer: is Responsible for receiving, investigating and documenting all claims reported to the hospital during the emergency incident.

Reporting to: Finance In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Receive all insured claims and
- Make compensation payment when required
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Traffic control officer: is responsible for controlling traffic within and outside the hospital.

Reporting to: Security In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting
- Establish ambulance entry and exit route
- Make sure ambulances are guaranteed free access to the incoming patient area.
- Secure important hospital areas from unauthorized vehicle access
- Secure evacuation areas
- Advise IC and section chiefs immediately of any unsafe, hazardous or security related conditions
- Post no-entry signs around un-safe areas.
- Report to IC about actions taken and coordinate and work closely with information officer.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Crowd Control Officer:is responsible for controlling crowd within and outside the hospital.

Reporting to: Security In-charge

Reporting Area: HEOC

- Participate in initial action plan meeting

- Control entry/movement of crowd/public
- Designates a separate waiting area for relatives of the injured control crowd.
- Makes sure that on no account will be relatives be permitted into the Casualty or designated wards during the emergency.
- Direct family members to designated family areas
- Initiate contact with fire or police, through the liaison officer when necessary.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

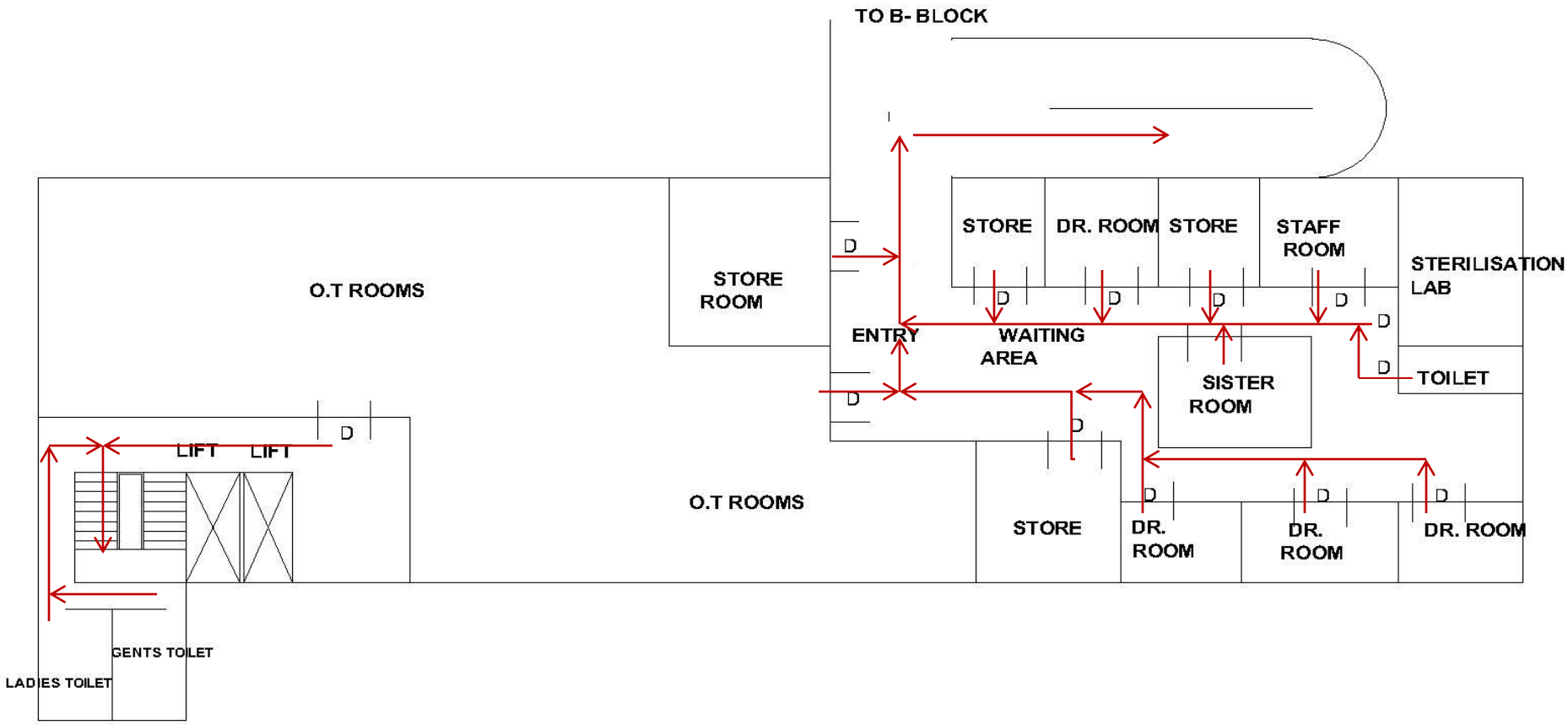
Volunteer Management Officer: is responsible for organising, assigning and deploying the volunteers within and outside the hospital.

Reporting to:

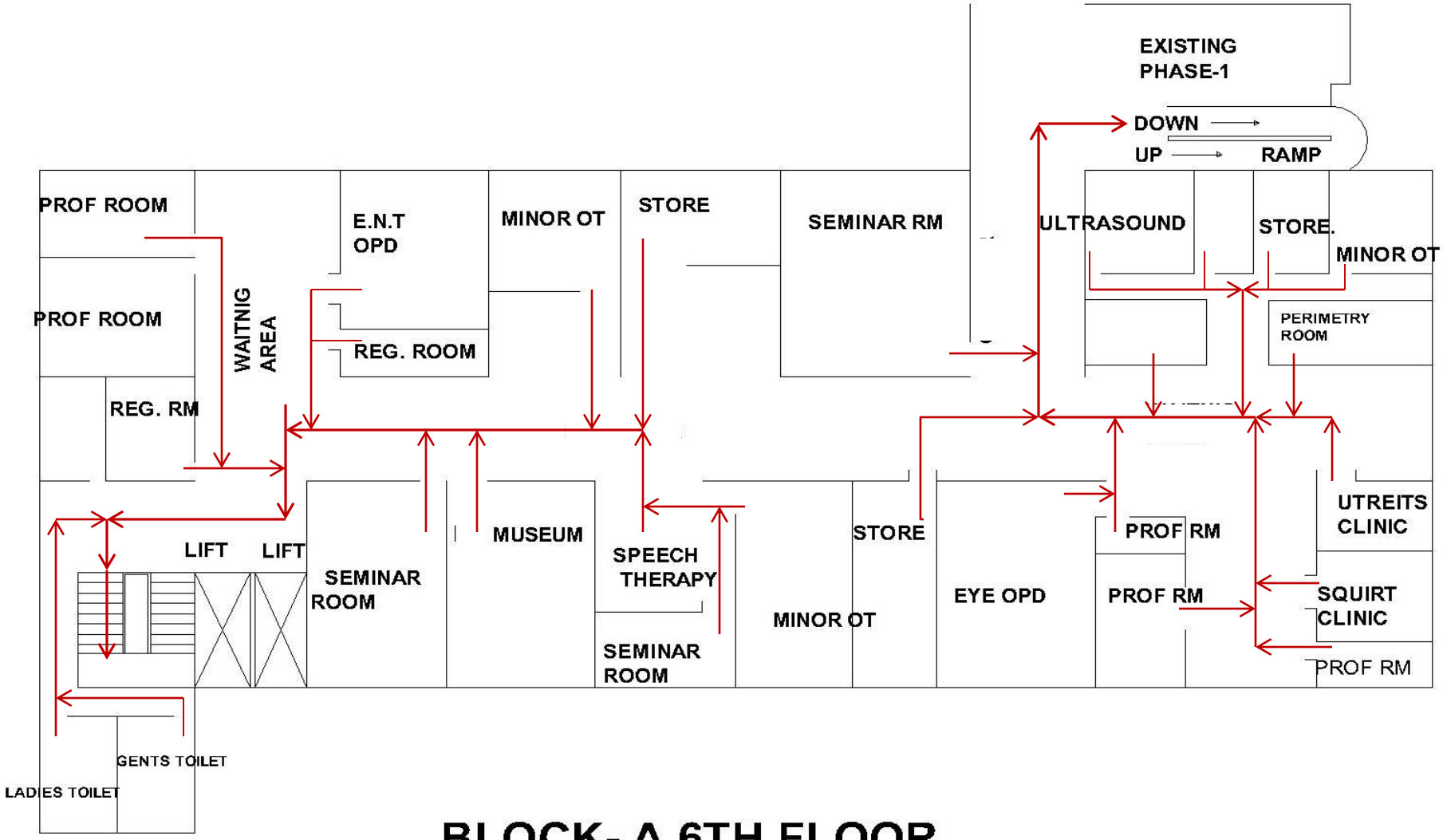
Reporting Area:

- Participate in initial action plan meeting
- If the hospital's security personnel are not sufficient to handle the situation, requests help from the hospital nearby volunteers.
- The role which volunteers will carry out should be predetermined, rehearsed, coordinated and supervised by regular senior staff.
- Designate them areas to control traffic and crowd.
- Extend the role beyond the responsibilities mentioned in the job cards if required.

Note: *PLEASE NOTE: IGMC should identify appropriate job titles for the responsibilities in their organization. These should reflect the departments and services for that organization. Every hospital will not need each of these job action titles, and most will have other job actions that will be needed and defined within the hospitals IRS. The IRS Job Action Sheets should be customized to the needs of the facility, and assigned as required by the individual emergency incident.*



BLOCK- A 7TH FLOOR



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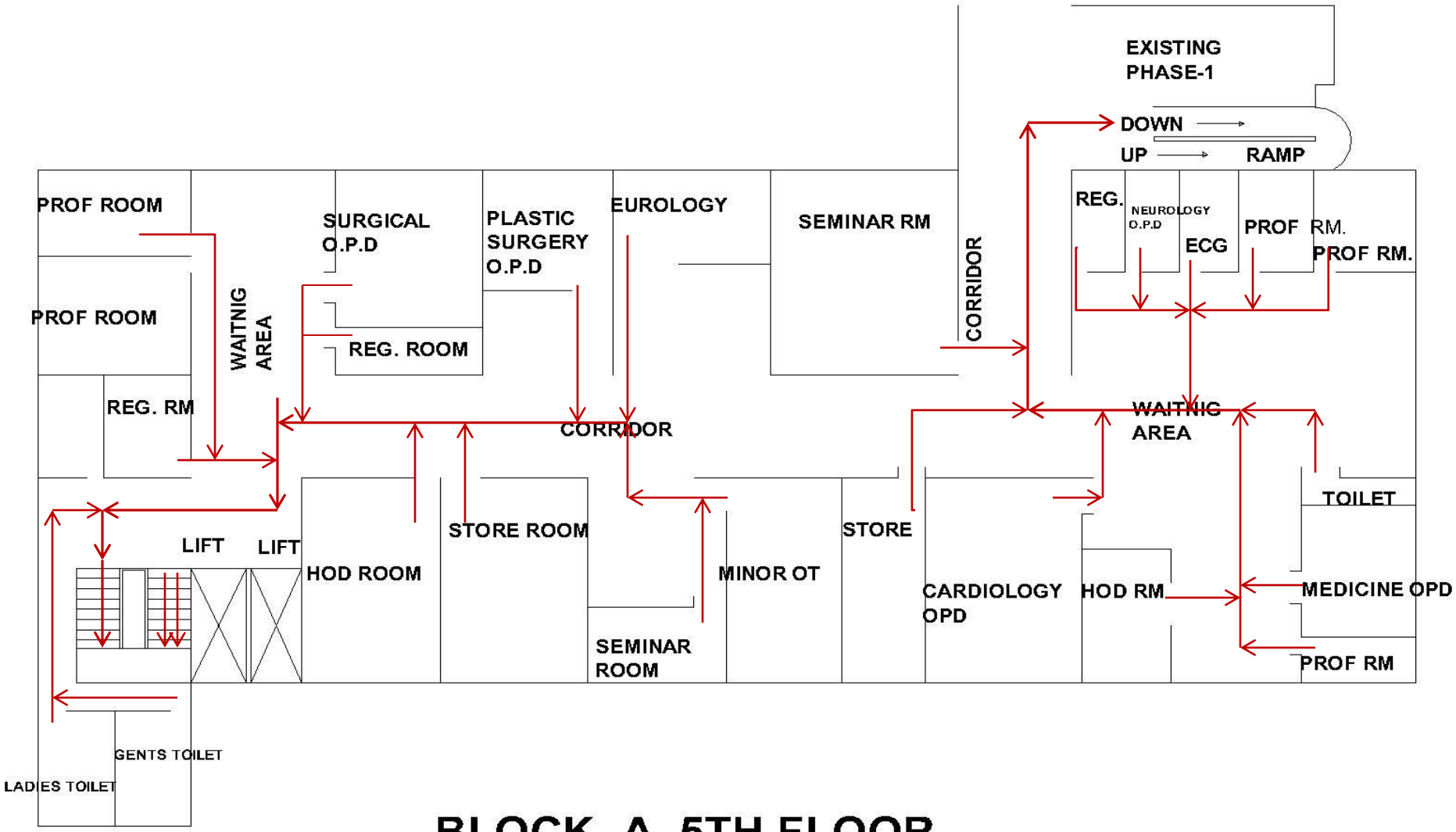

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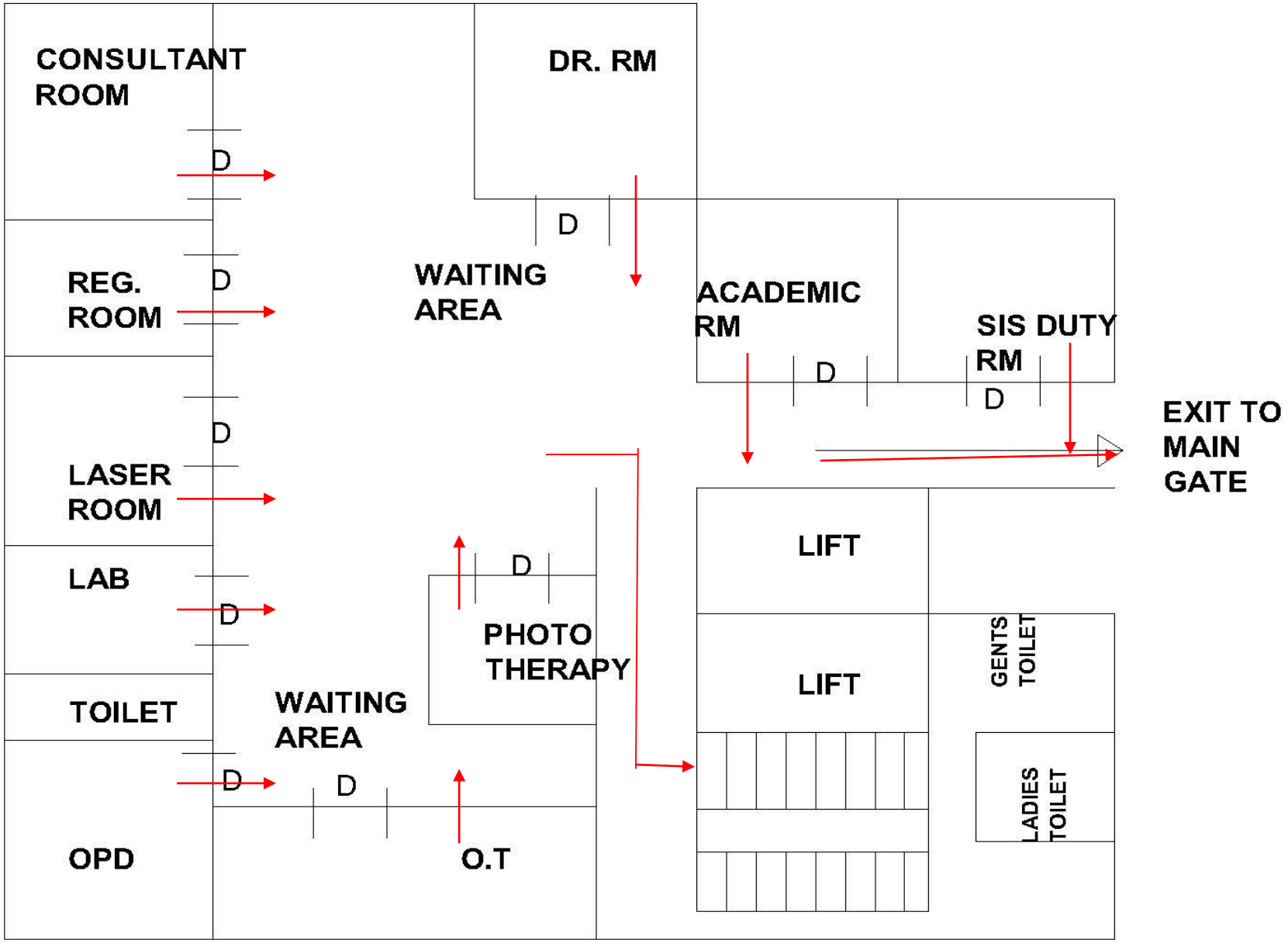

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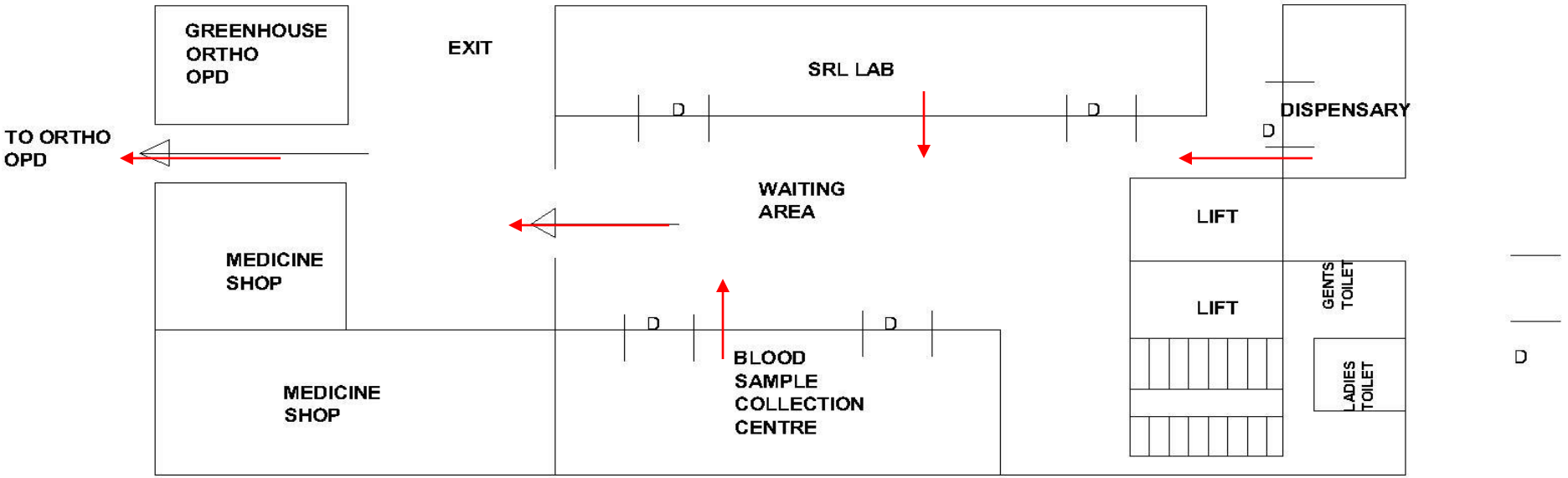
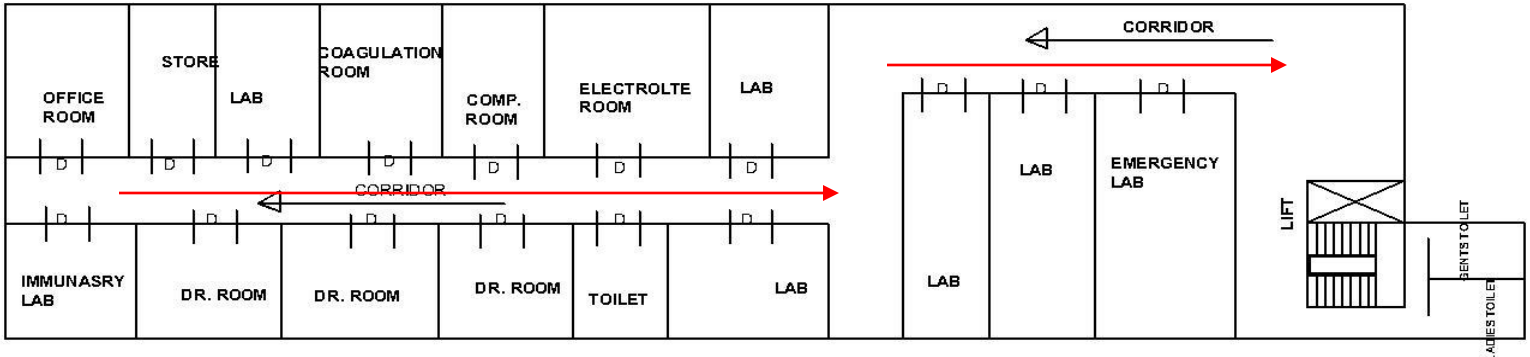
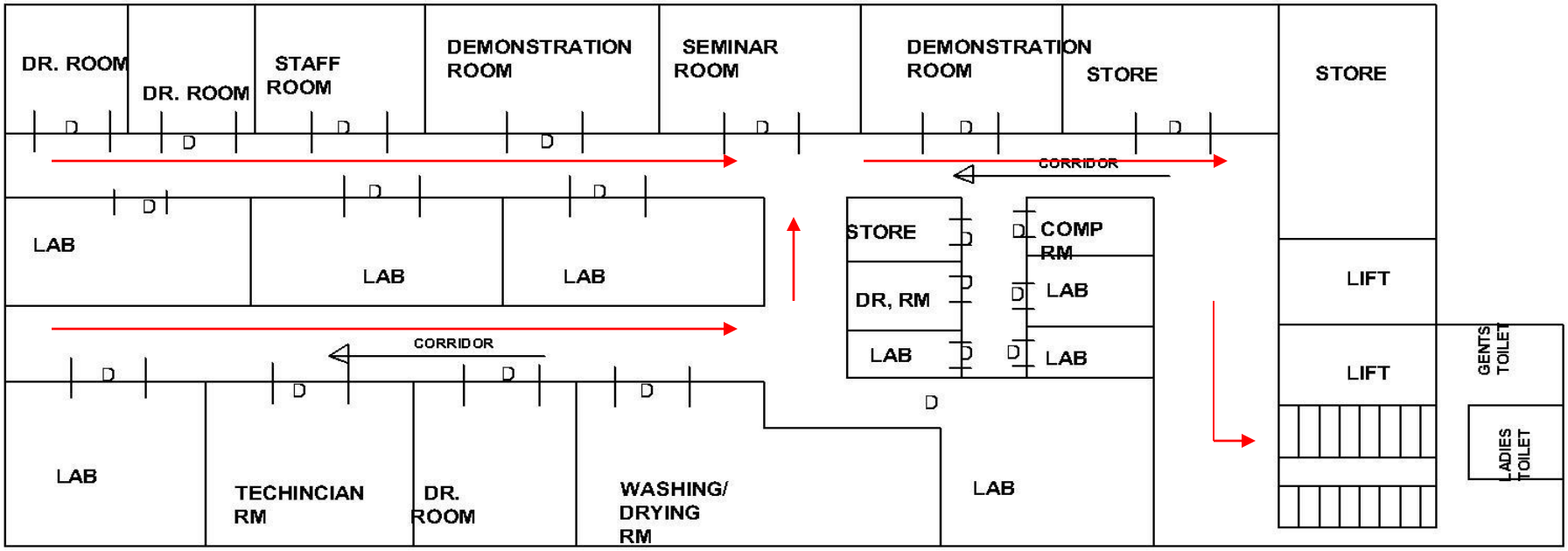


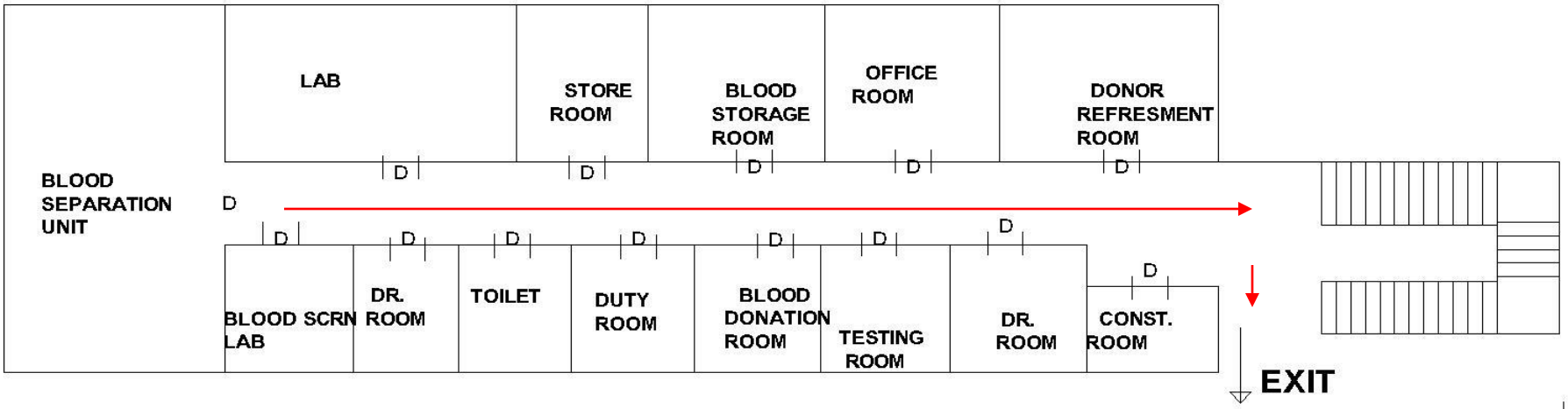
3RD FLOOR BLOCK -A



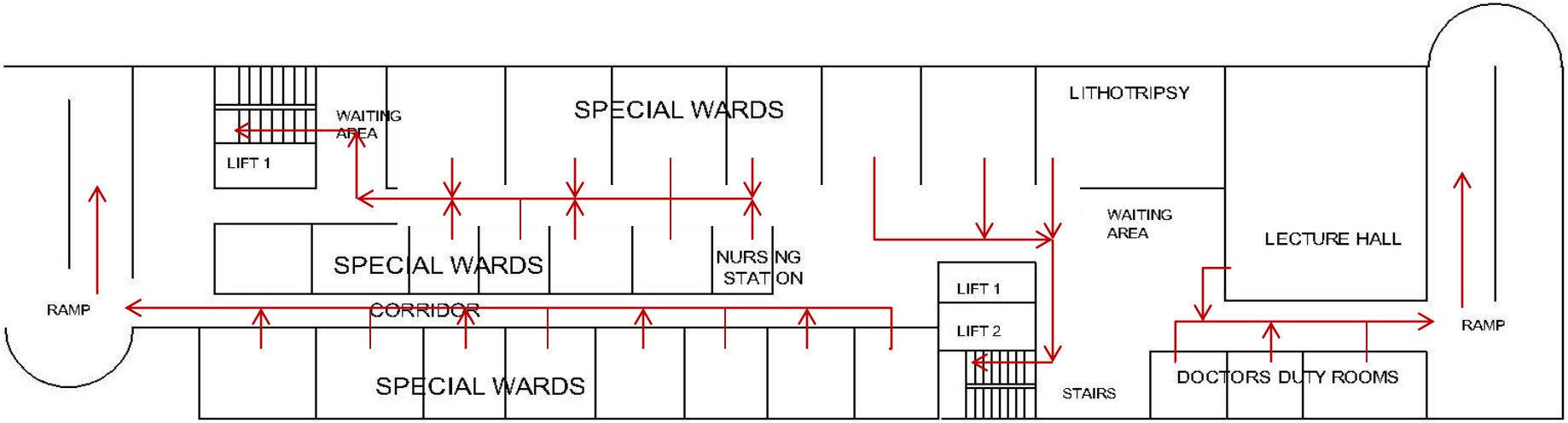
DEPT. OF BIOCHEMISTRY 1ST FLOOR BLOCK -A



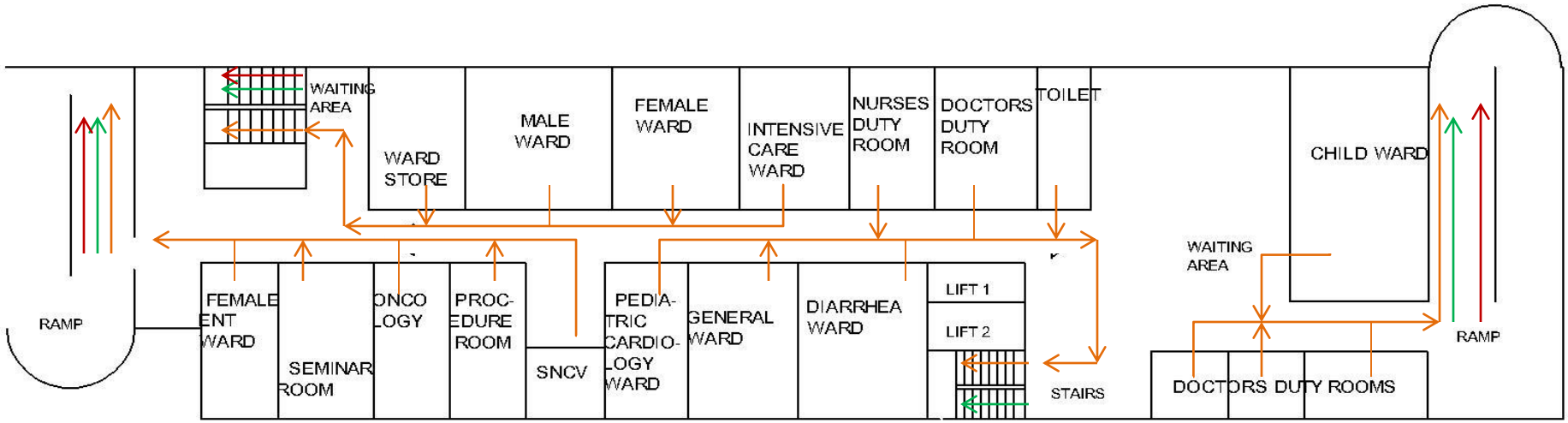
DEPT. OF MICROBIOLOGY 2ND FLOOR BLOCK -A



BLOOD BANK G. FLOOR BLOCK -A



6TH FLOOR B-BLOCK



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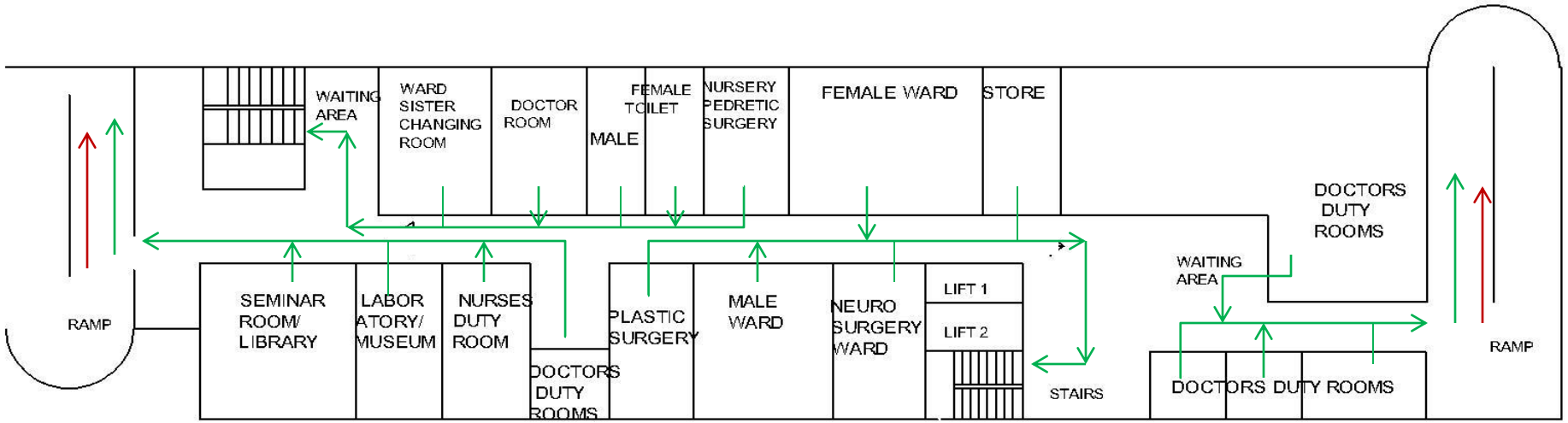

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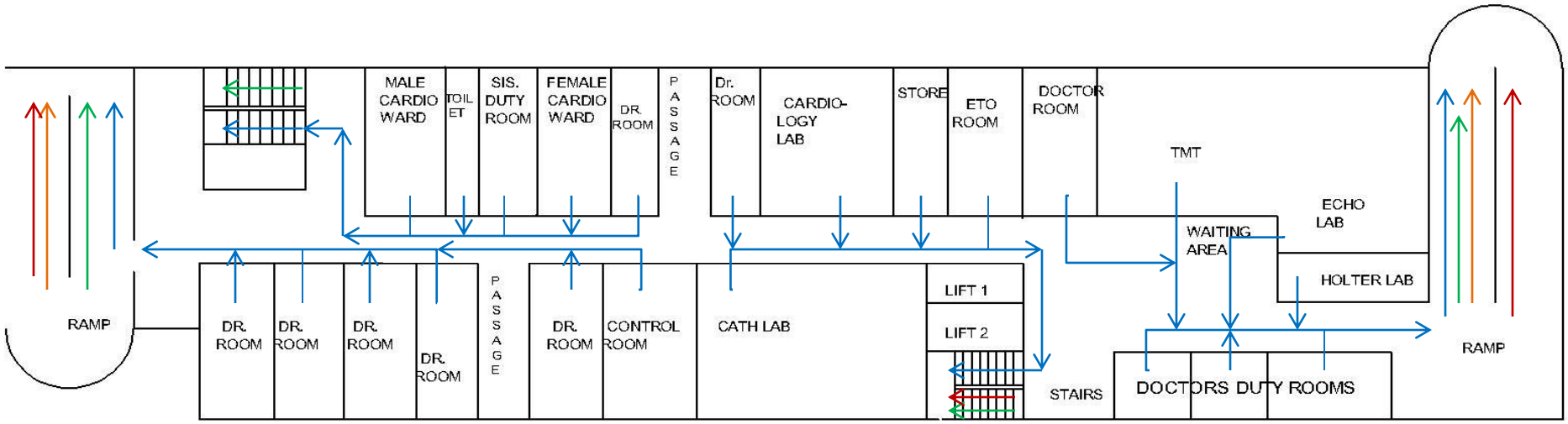

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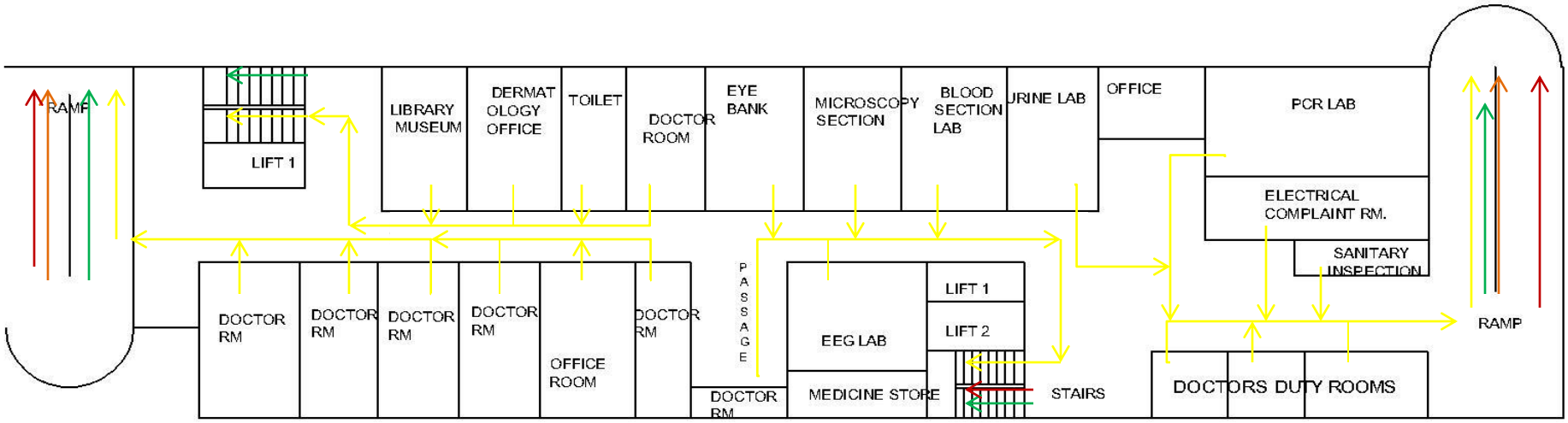

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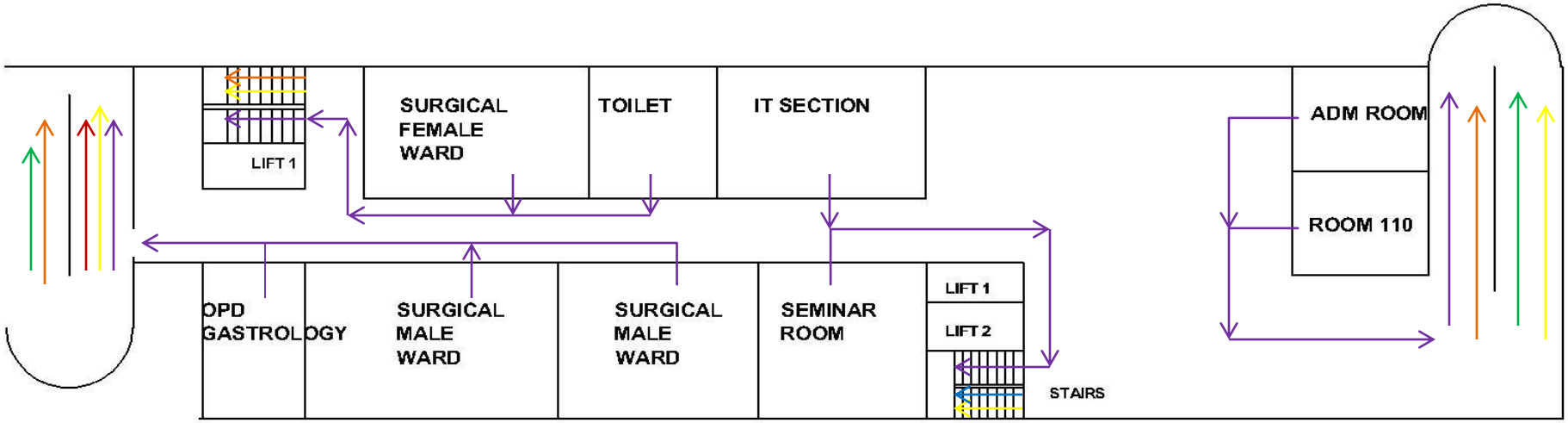

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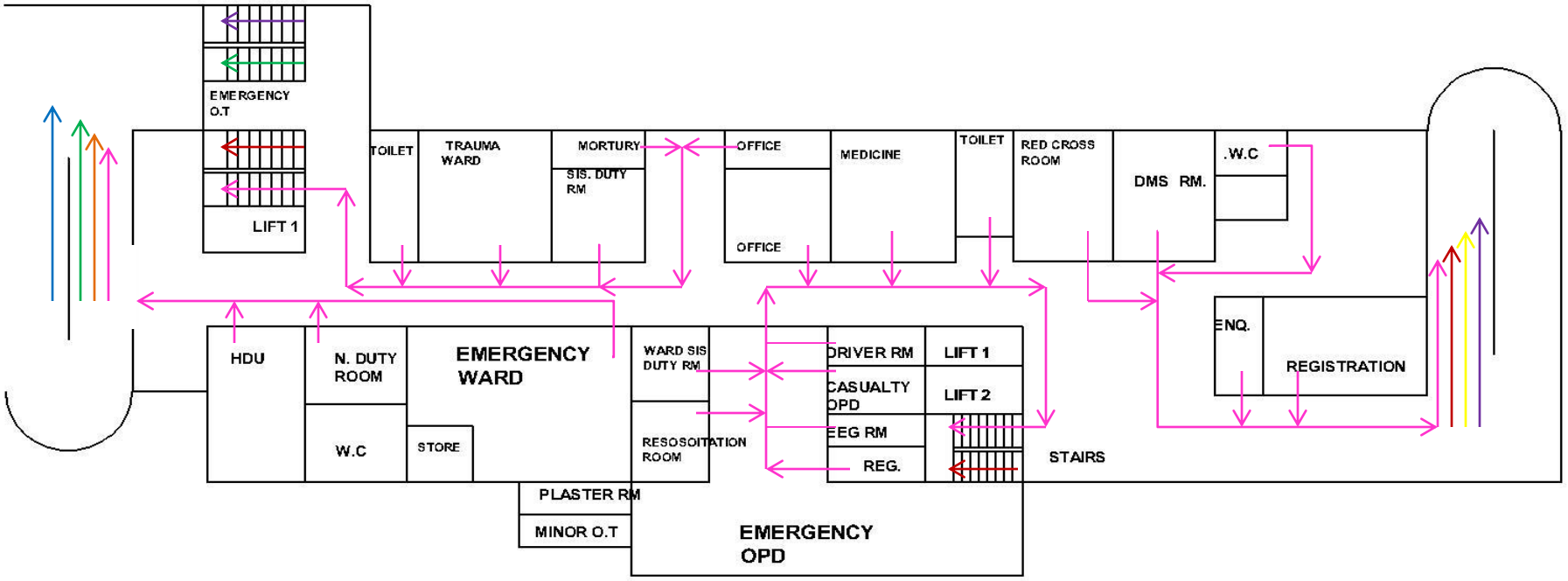
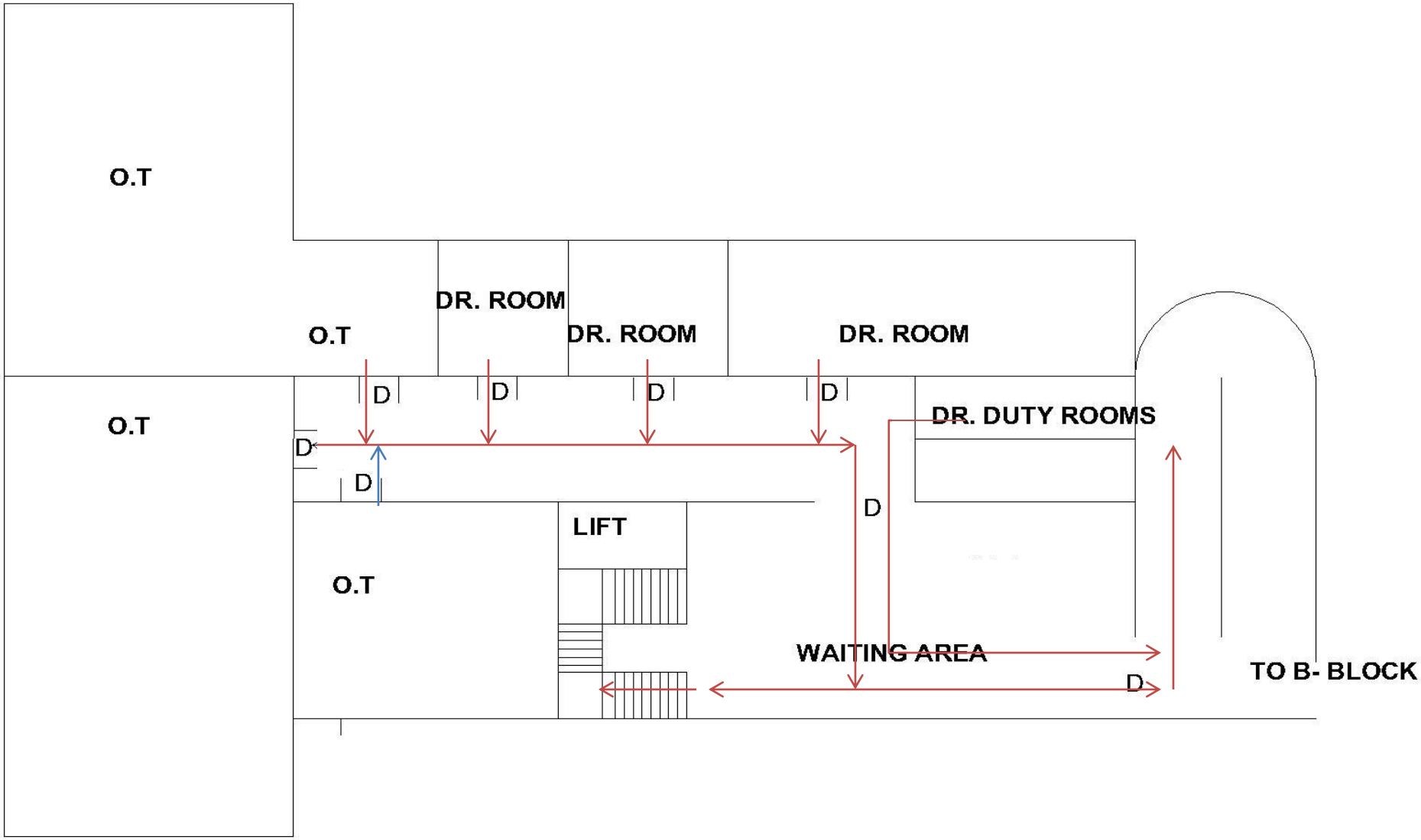


G. FLOOR B - BLOCK



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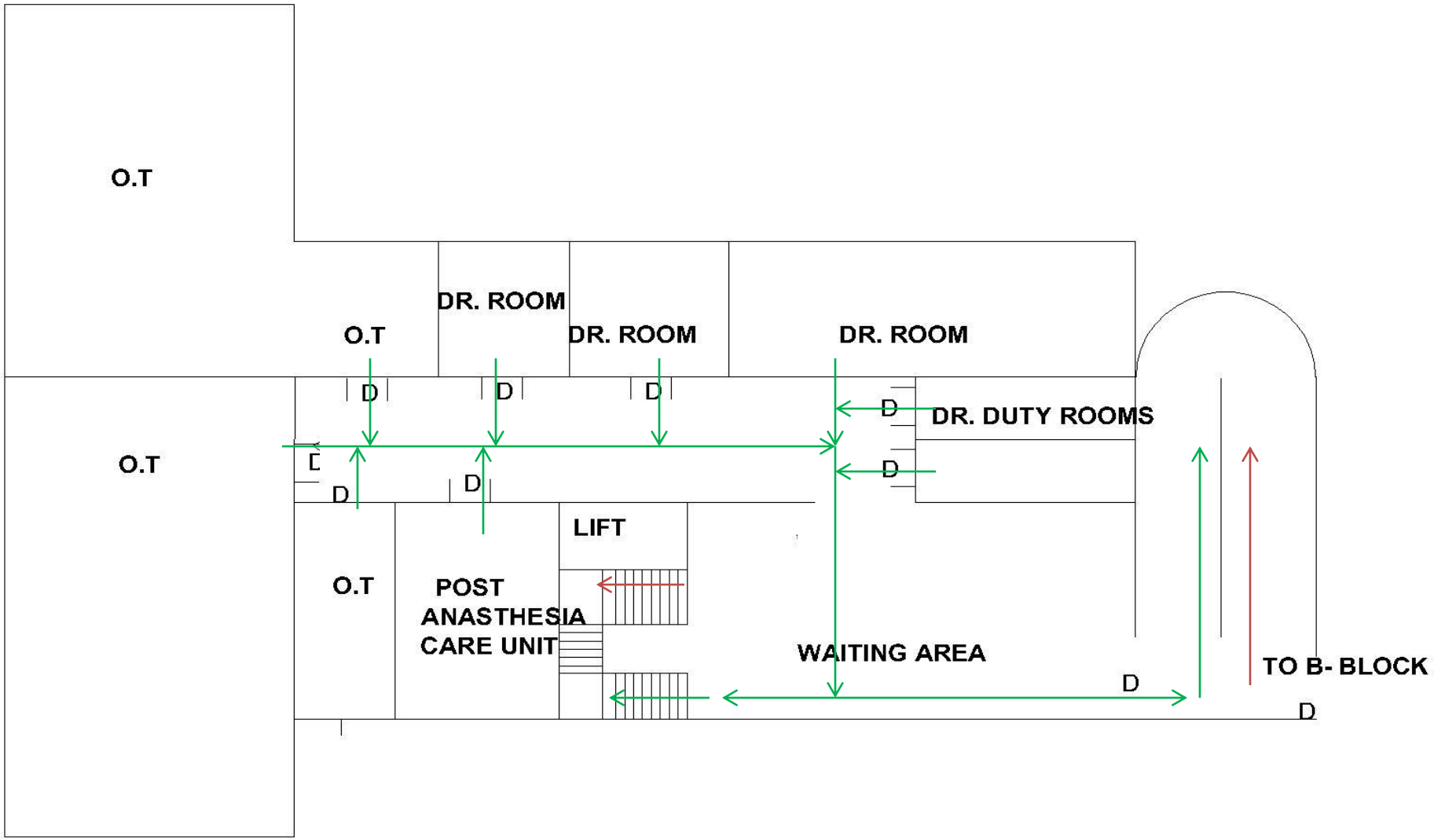

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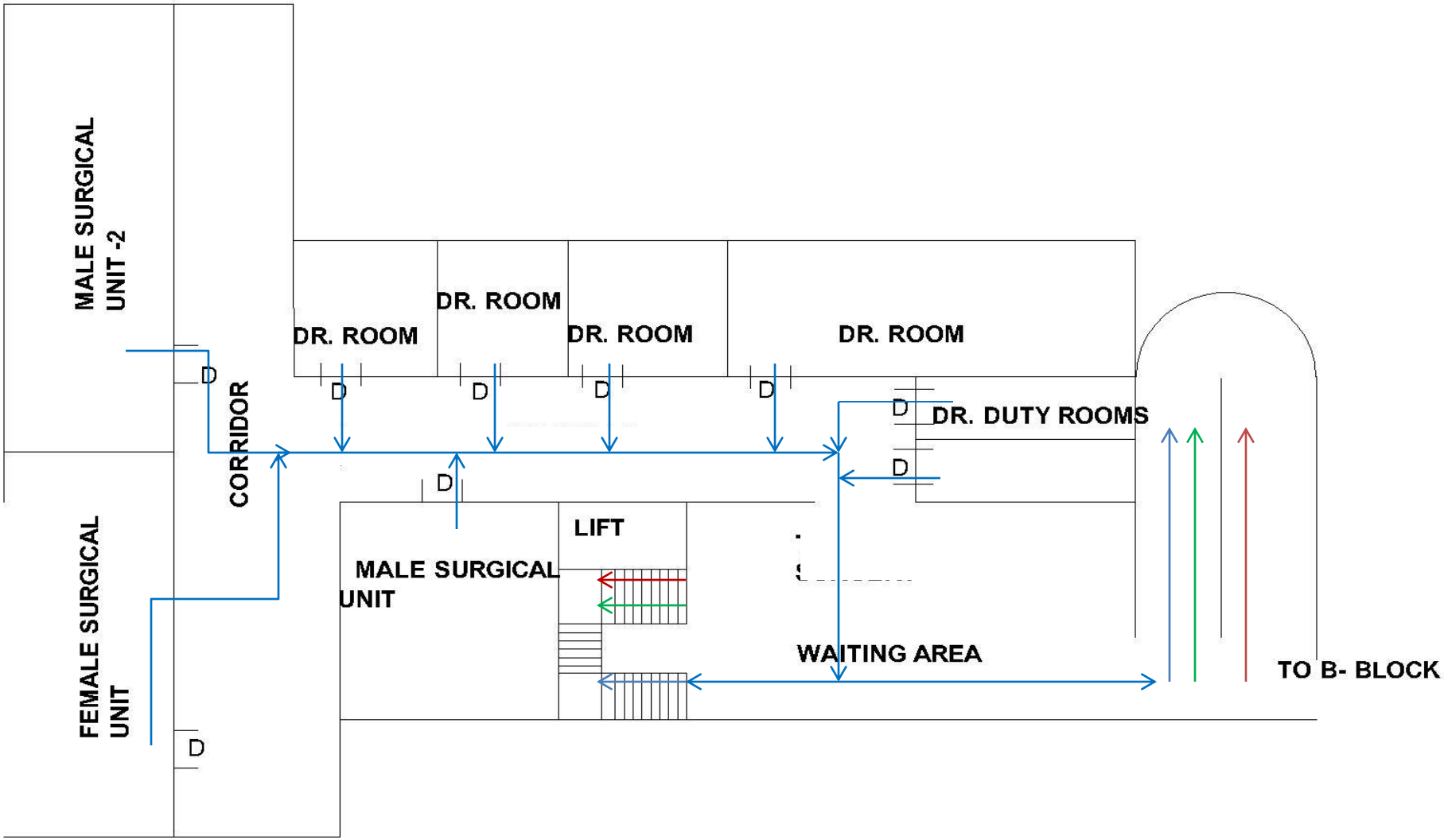

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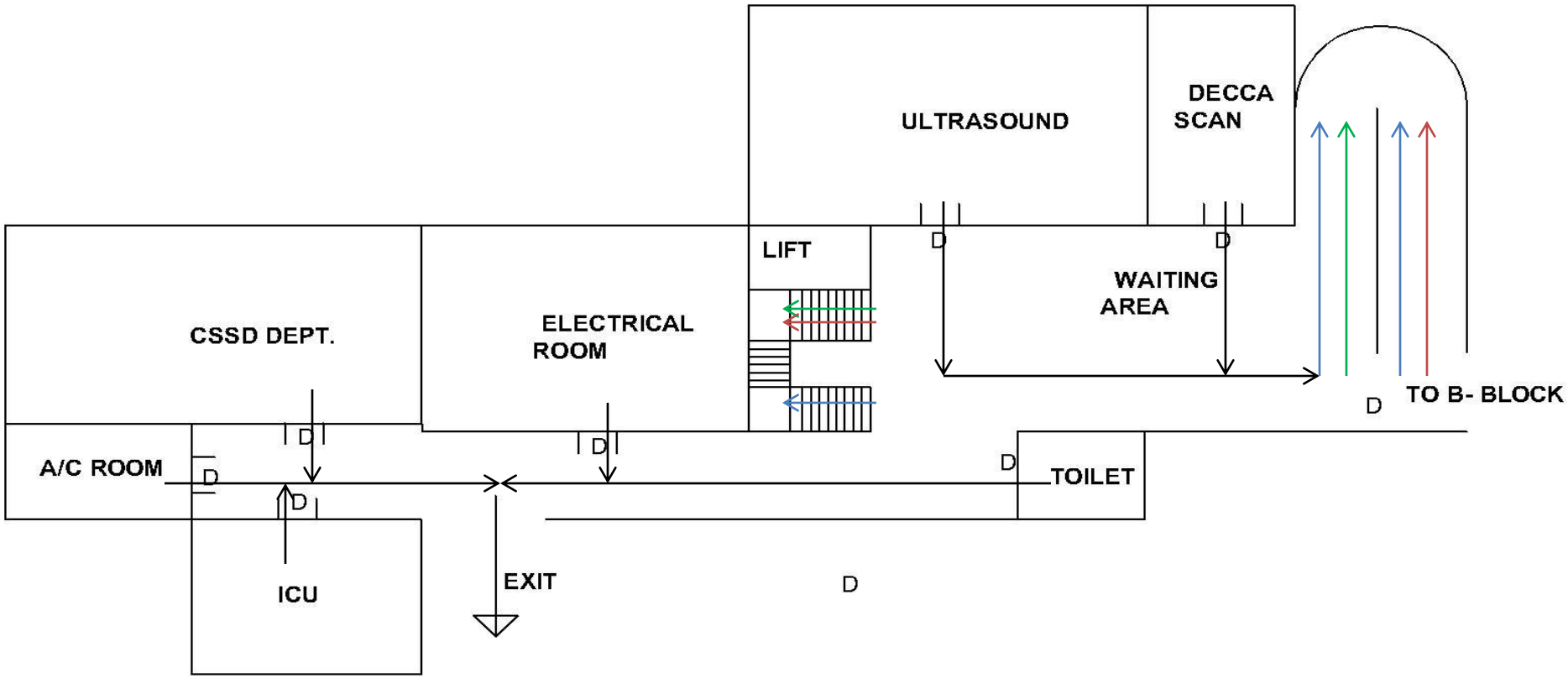

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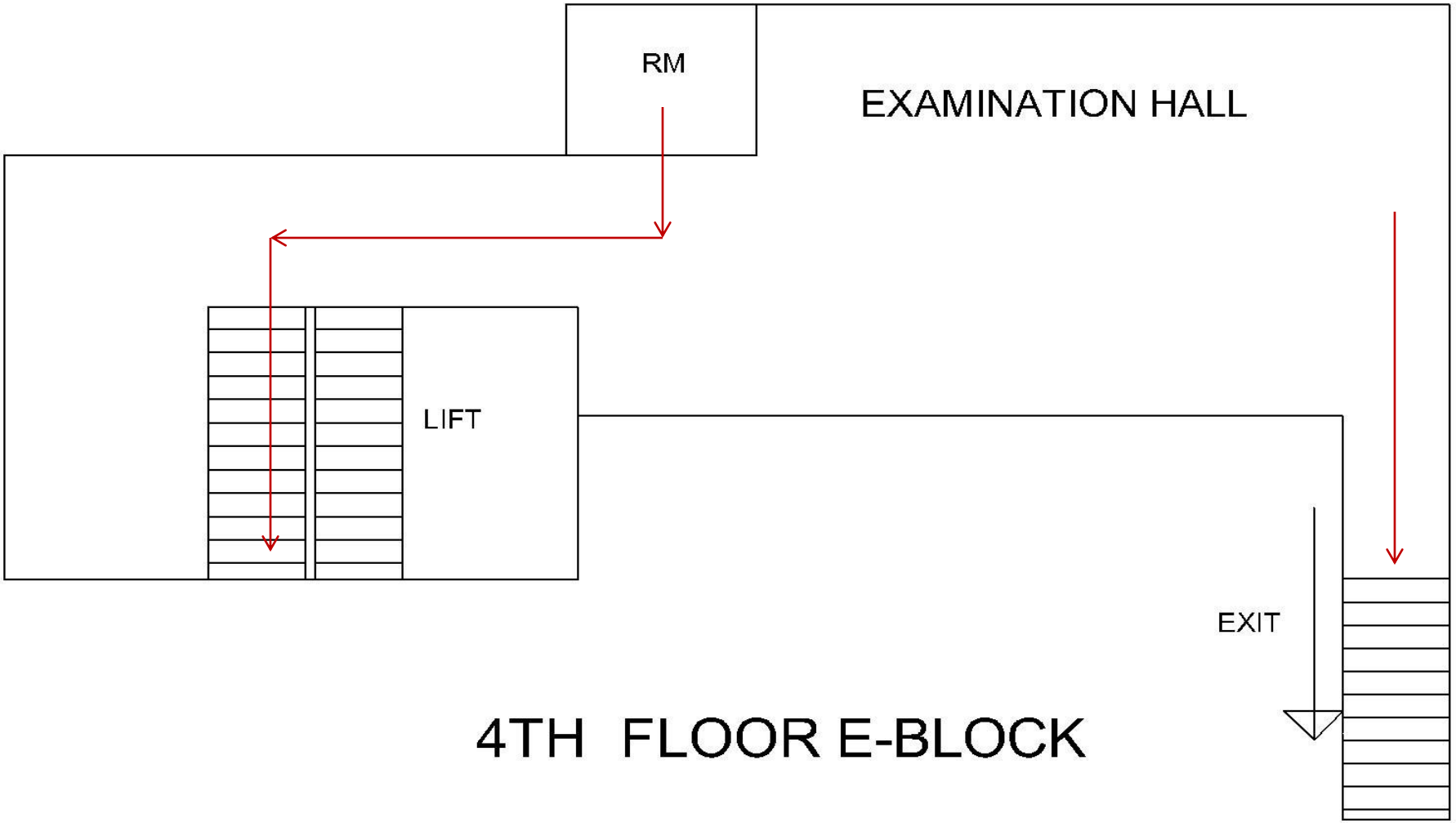
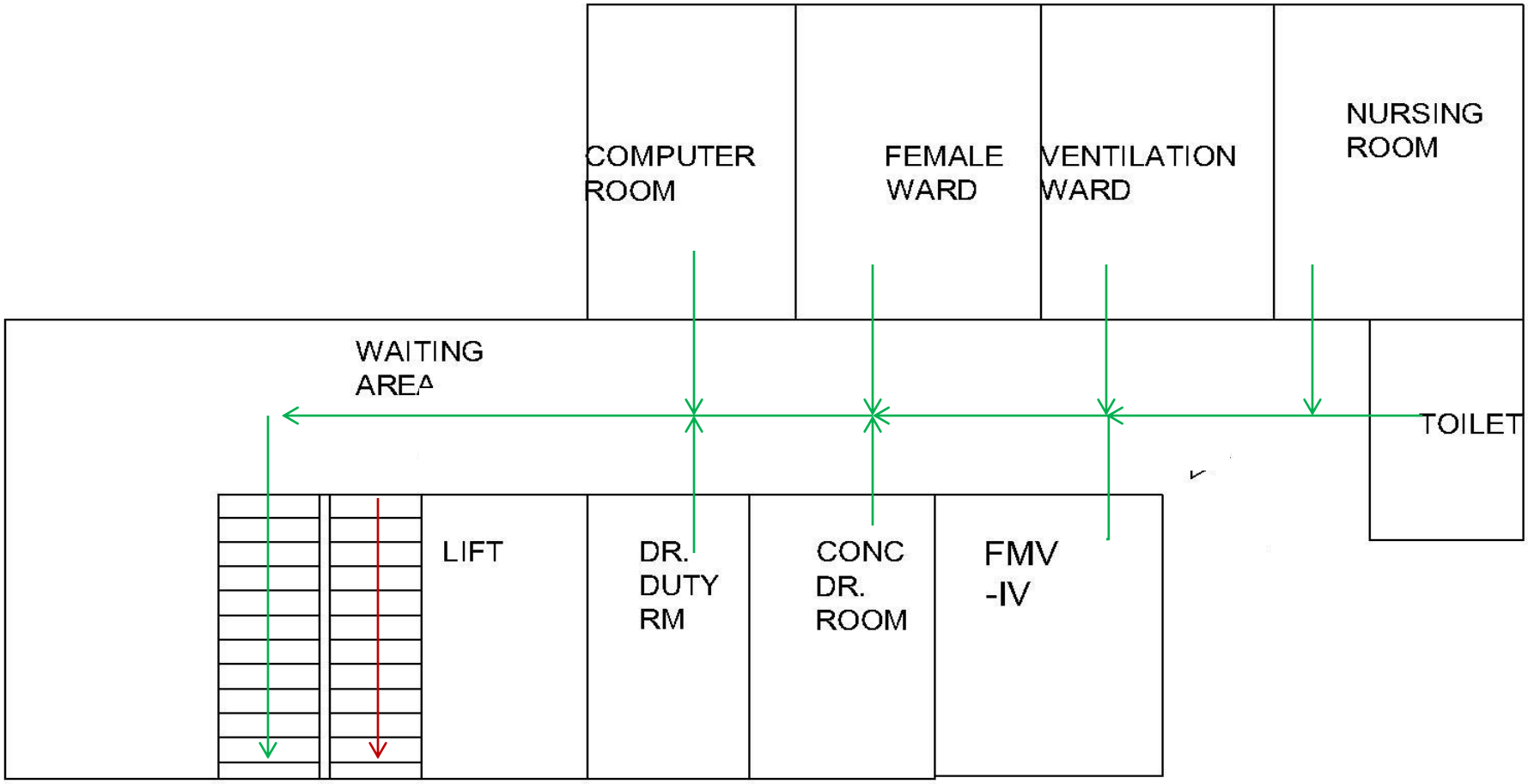
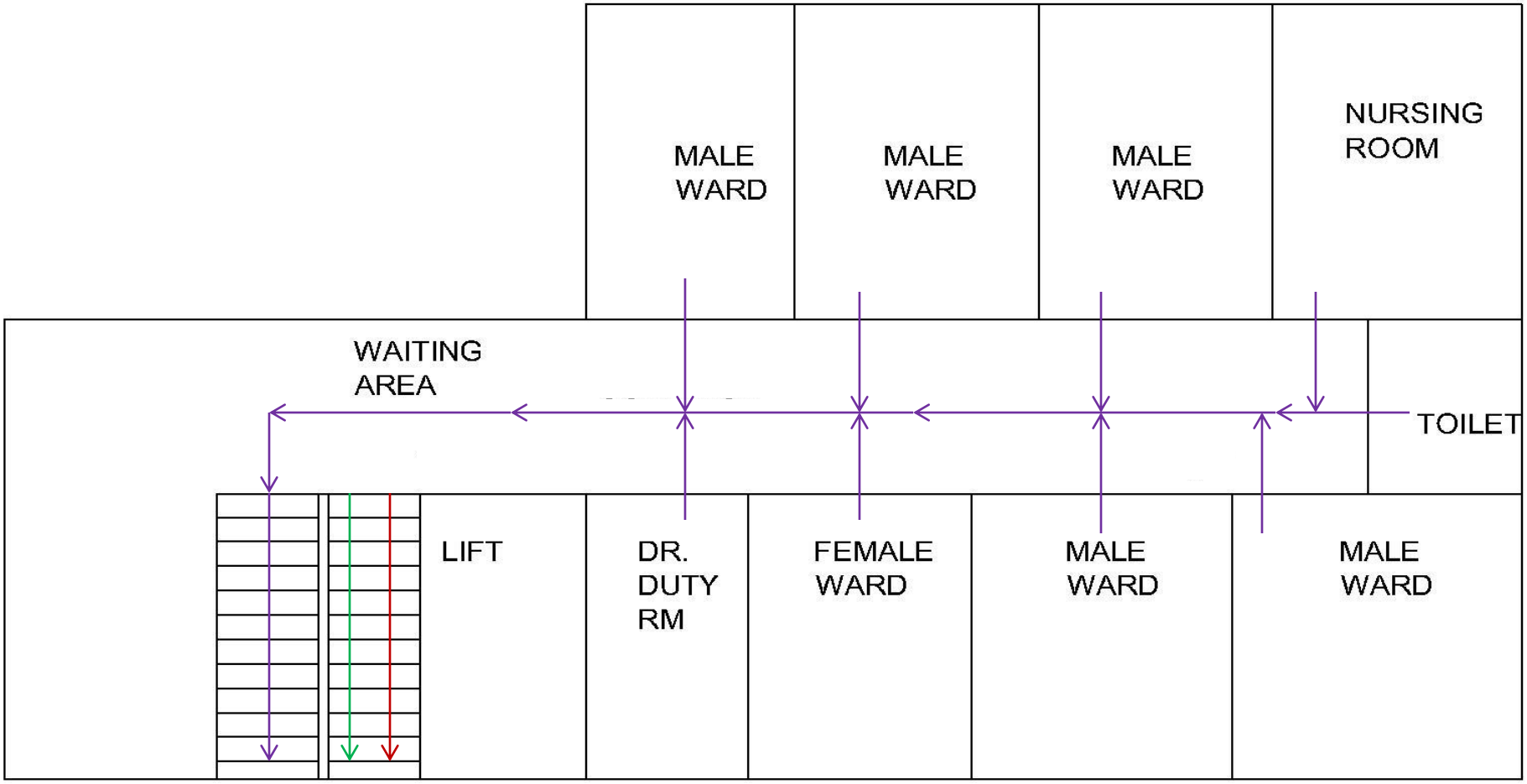


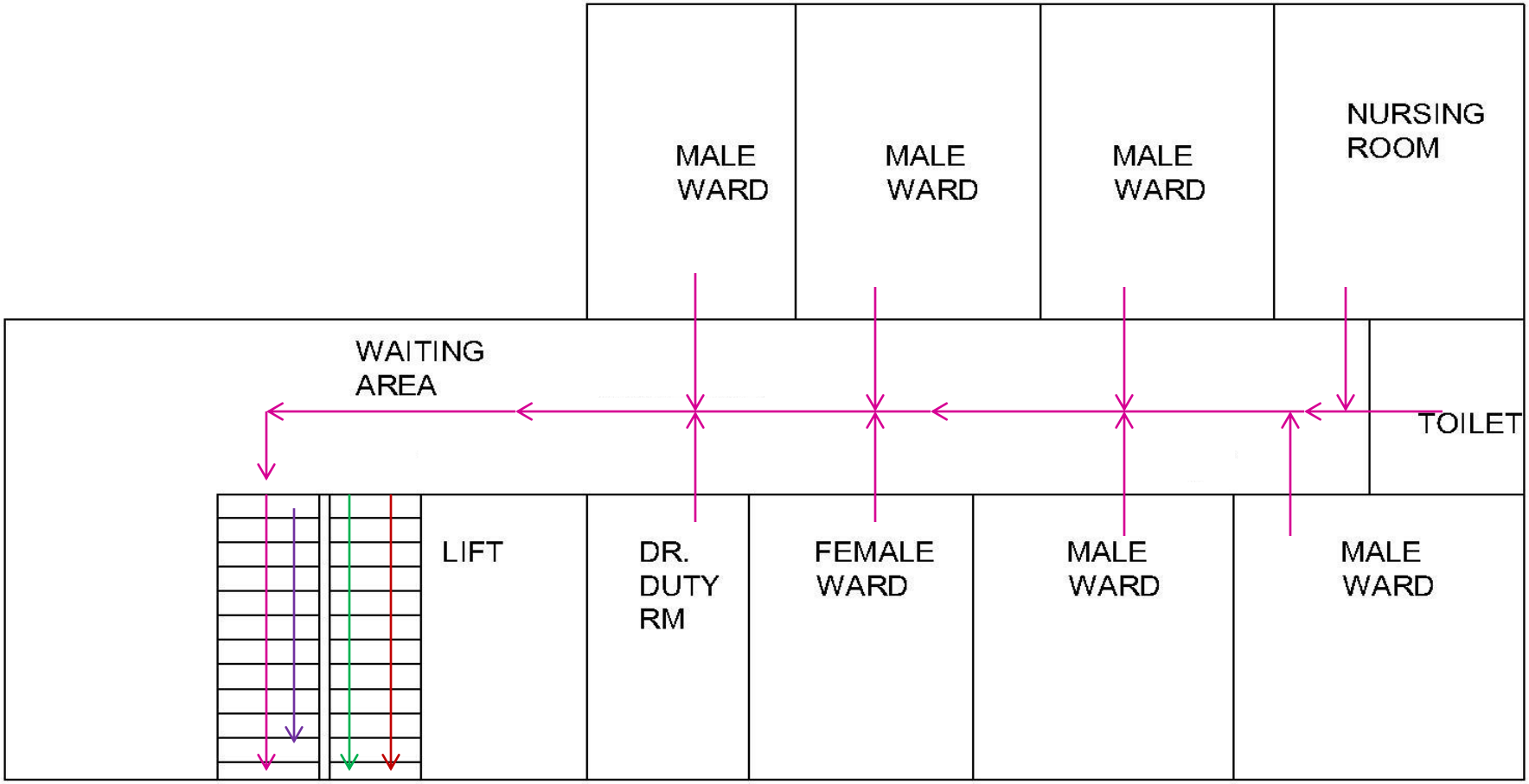
4TH FLOOR E-BLOCK


COMPUTER ROOM
FEMALE WARD
VENTILATION WARD
NURSING ROOM
WAITING AREA
TOILET
LIFT
DR. DUTY RM
CONC DR. ROOM
FMV -IV

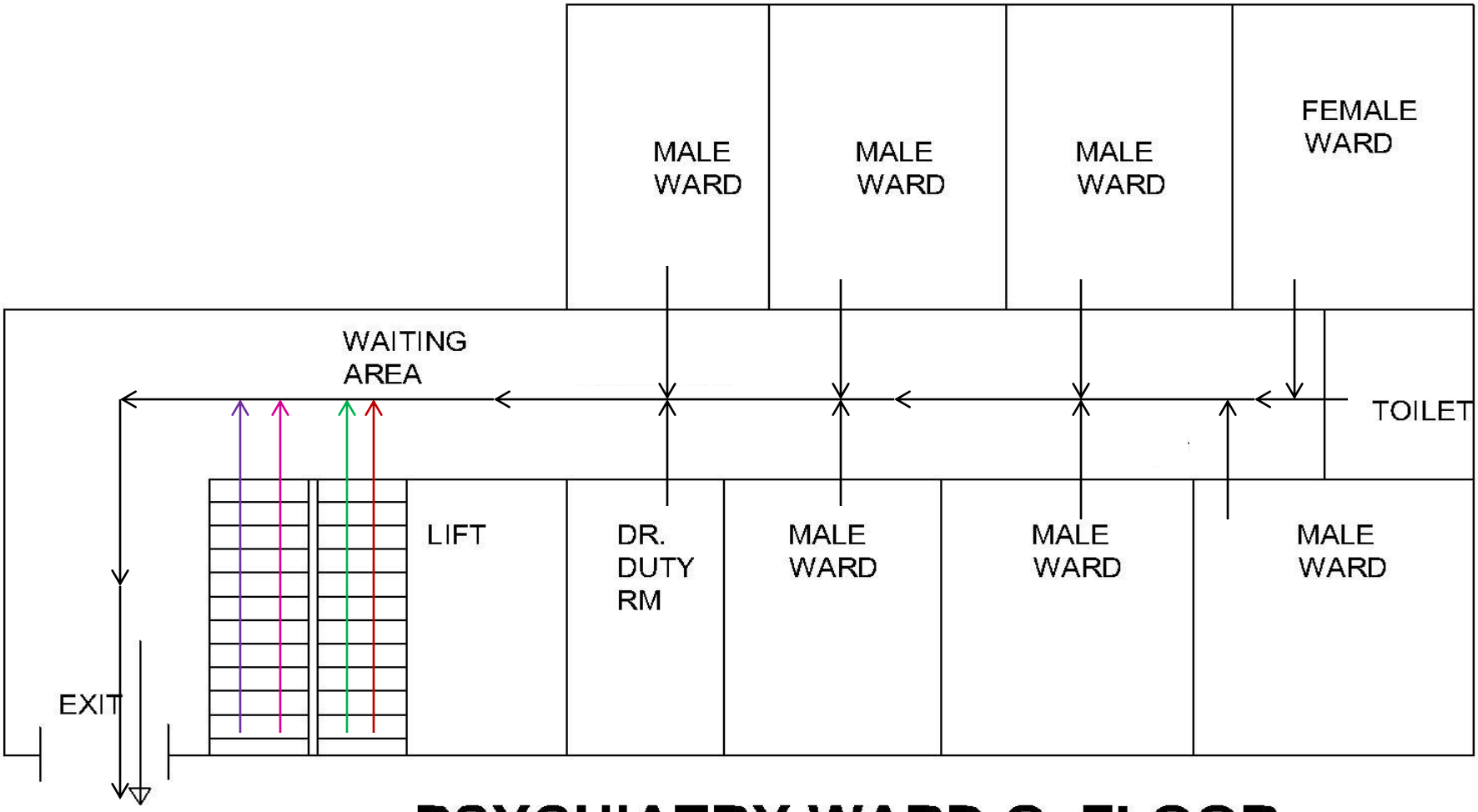
3RD FLOOR



CHEST WARDS 2ND FLOOR E-BLOCK



SKIN WARDS 1ST FLOOR
E-BLOCK



PSYCHIATRY WARD G. FLOOR
E-BLOCK