

MCARE Game Settings, User Case and Game Flow

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Game Settings

Scenario

- Shooting
- Explosion
- Stabbing
- Car Attack
- Stampede
- Plane crash
- Earthquake
- Fire in building (TBD)

EU HR Capacity

- # Admin Staff
- # Auxiliary Staff
- # EU Doctors
- # EU Nurses

Hospital Surge Capacity

- # Auxiliary Staff
- # Doctors
- # Nurses



1 % of available surge capacity staff is randomized after shift setting 100

Bed Capacity

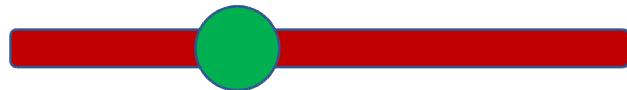
- # EU beds
- # ICU beds
- # Operating Rooms
- # Hospital ward beds



1 % of available free beds is randomized after bed setting 100

Difficulty

- % of red patients
- Arrivals per hour
- Pre-hospital Capacity
 - ALS
 - BLS
 - None
- Warning time
 - 10 min
 - 0 min
- Hospital shift
 - Morning
 - Afternoon
 - Night



1 100

Wildcards

EU HR Capacity

- Staff accident
- Extra staff arriving

Hospital Surge Capacity

- Staff absence
- Elevator failure
- Communication failure

Bed Capacity

- No space in ward X
- New ward is now open
- ICU decanting completed
- Fire in ICU
- OT complication
- No ambulances available for patient transfer
- X ambulances available for patient transfer

Context

- Traffic jam
- Ambulance accident
- Second event
- Violent crowd
- Power failure
- Fake news on media
- Media requests

Analytics – By Role & Zone

Role Performance indicators (live scores + session's highest/lowest)

Triage officer

- Move to triage point
- Deploy Triage Kit
- Handover ID files
- Triage patients
 - Accuracy
 - Speed

Green Zone Doctor / Nurse

- Move to Green Zone
- Treat patients
 - Accuracy
 - Speed
- Re-Triage patients
 - Accuracy
 - Speed

Red Zone Doctor / Nurse

- Move to Red Zone
- Treat patients
 - Accuracy
 - Speed
- Re-Triage patients
 - Accuracy
 - Speed

Zone Performance indicators (live scores + session's highest/lowest)

- Average patient's waiting time
- % Accuracy
- Patients/min
- Total life minutes (gain/loss)

- Average patient's waiting time / length of stay
- % Accuracy (treat/triage)
- Patients/min
- Total life minutes (gain/loss)

- EU Decanting (time to decant EU beds by 50%)
- Average patient's waiting time / length of stay
- % Time spent over 100% capacity
- % Accuracy (treat/triage/destination)
- Patients/min
- Total life minutes (gain/loss)

Clinical Lead

- ICT meeting
- Move to Red Zone
- EU Decanting (2)
 - Accuracy
 - Speed
- Confirm triage
 - Accuracy
 - Speed
- Set Destination
 - Accuracy
 - Speed

Analytics – By Role & Zone

Role Performance indicators (live scores + session's highest/lowest)

Resource Lead

- ICT meeting
- EU Decanting (w/ Clinical Lead)
 - Delegation
 - Accuracy
 - Speed
- Deploy Kits
 - Delegation
 - Accuracy
 - Speed
- Upon request: (?)
 - Surge Staff Mobilization
 - Supply chain issues

Incident Commander

Performance indicator (standard within x minutes from alert)

- Activate the plan (1 min)
- Alert to security (2 min)
- ICT meeting (5 min)
- Establishing contact with EMS at scene (10 min)
- First information to media (15 min)
- Assessment if resources are adequate (30 min)
- Notify decision on referrals to receiving hospitals (40 min)
- De-escalation time after last patient arrives

ICT Performance indicators (live scores + session's highest/lowest)

- To be discussed...

ame Mechanics – Pending issues

- Moving patients requires the availability of automatically assigned auxiliary staff (as set in the game settings) / or manually designated staff (a nurse can be designated to push a stretcher...)
 - Select and drop – to identify target patient and end destination ?
 - Red patient moves with auxiliary staff at X m/s ?
 - Green patient moves alone at Y m/s ?
- Treating patients (interventions that take time) can be delegated to a virtual team (according to staff availability as determined in HR settings)?
- Patient tracking – Manually by the users (paper/pen) or Automatically (admin staff automatically assigned according to staff availability as determined in HR settings)?
- Staff surge mobilization (how to recruit ? A button asking for doctors / nurses; how to deliver ? Titrated over time ?)
- Resource Lead injects - How to solve supply / logistic issues that are automatically generated ? Provide options ?
- Incident Command Team injects and problem solving – database of wildcards ? And given options ?
 - Media
 - Families
 - Ethics
 - Authorities

Game settings

BENCHMARKING BEST POSSIBLE SCORE

HUMAN/BOT TEAM SCORE

PERFECT BOT 1

Max Life
Gained

45 min

HUMAN 1

Max Life
Gained

35 min

PERFECT BOT 2

5 min

HUMAN 2

4 min

PERFECT BOT 3

10 min

INPERFECT BOT 3

8 min

PERFECT BOTS - LIFE GAINED

60 min

TEAM LIFE GAINED

47 min

Total SCORE

Life Gained – (47/60) = 78%

+

Other performance indicator 1

+

Other performance indicator 2

+

Other performance indicator 3

x

Question mark score

Question
Mark
BONUS

PERFECT BOT

Max Speed & Accuracy

Score x2

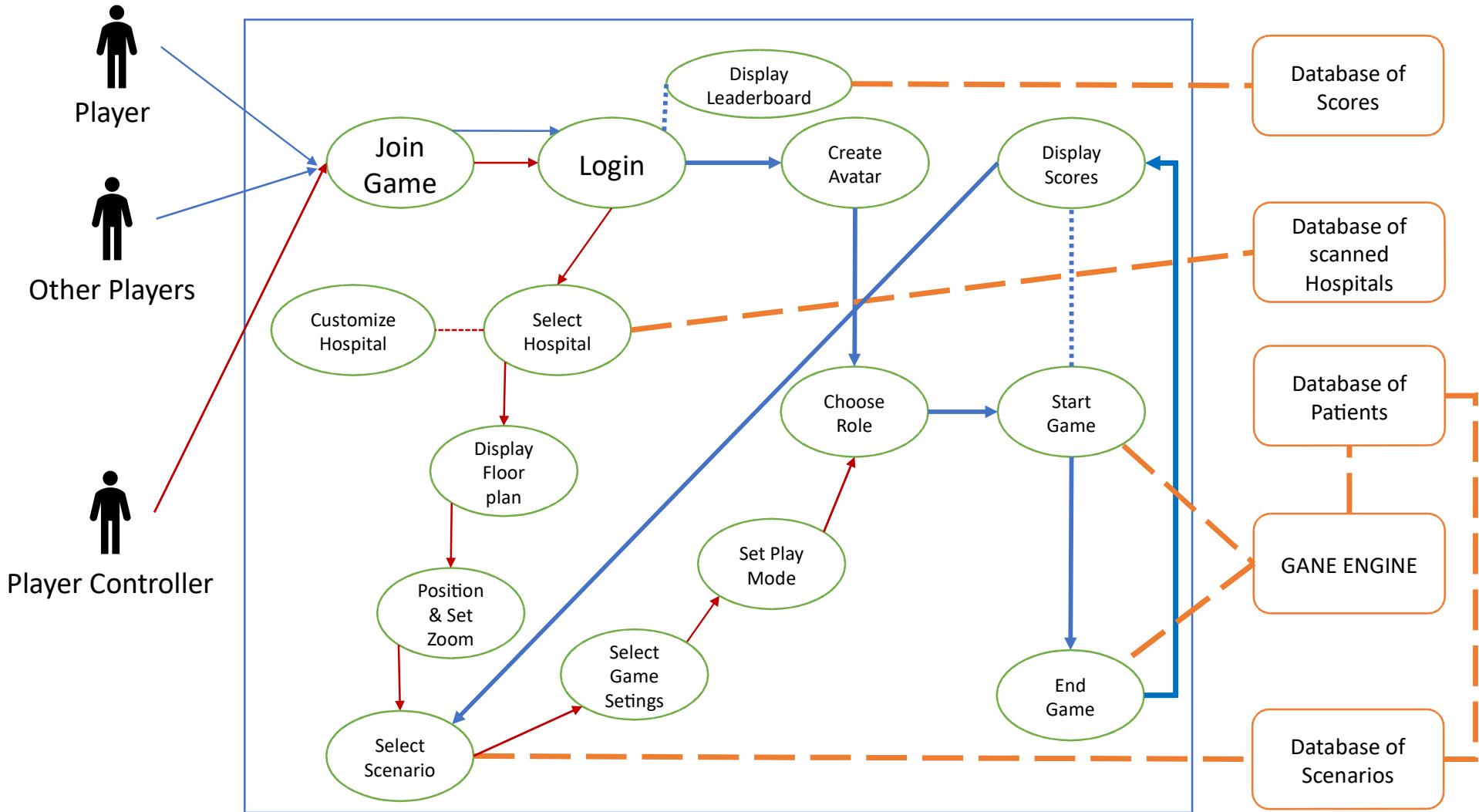
Questions are always taken by humans, even in a bot/human team

HUMAN

Human Speed & Accuracy

Score x0.5 to x2

AR TTX Game System



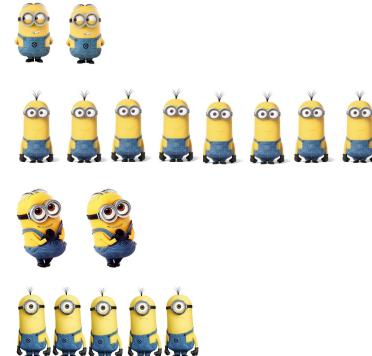
PLAYERS

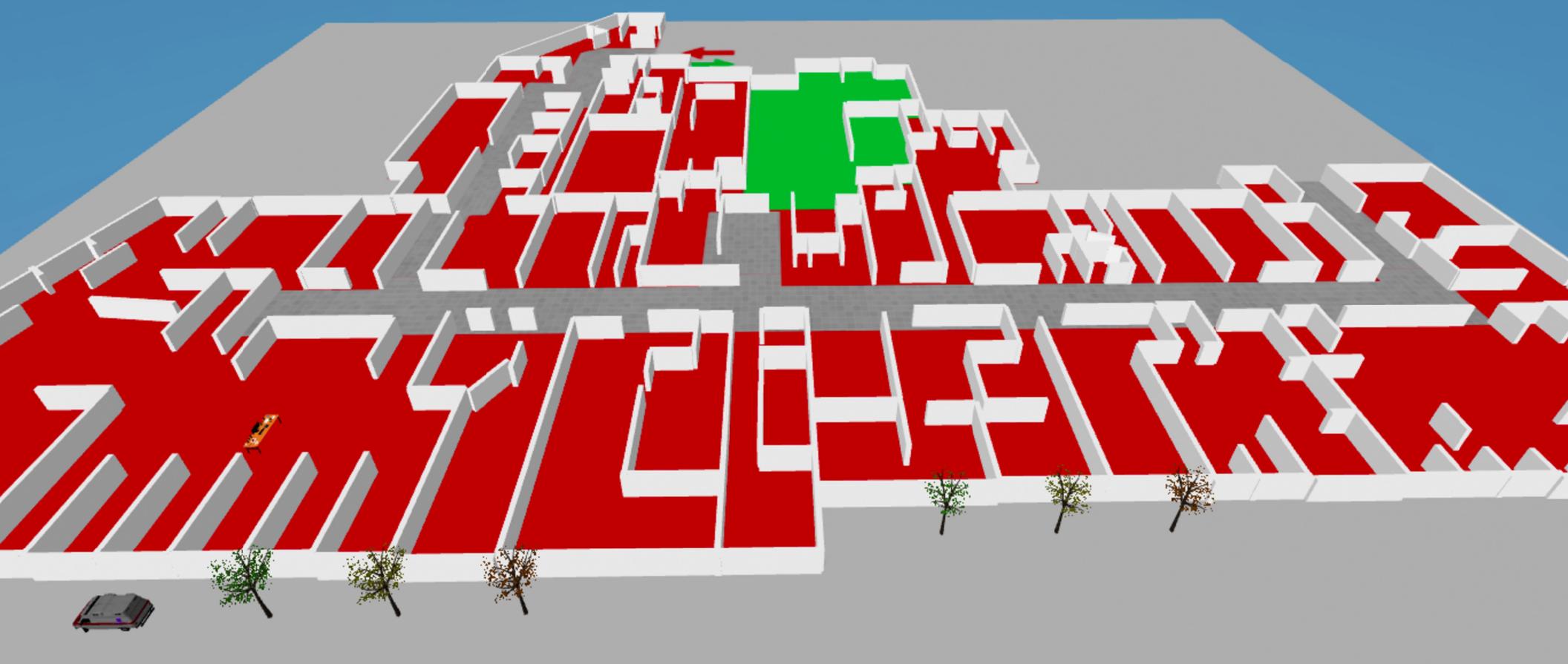
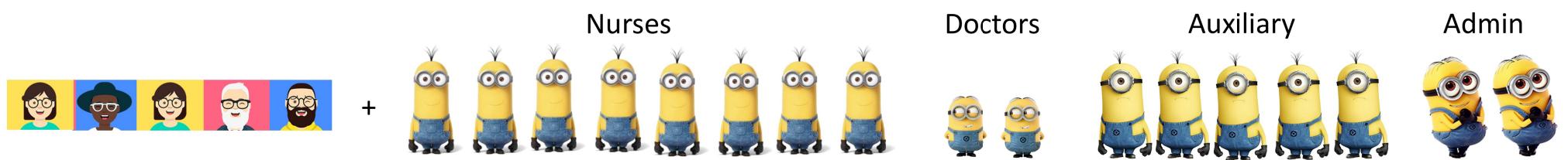
Login	Game settings	Input settings	Available Roles	Choose Roles
2 Nurse	# Nurses	10 Nurses	Incident commander	Incident commander
3 Doctors	# Doctors	5 Doctors	Resource Lead	Resource Lead
0 Admin Staff	# Admin Staff	2 Admin Staff	Clinical Lead	Clinical Lead
0 Auxiliary Staff	# Auxiliary Staff	5 Auxiliary Staff	Red Zone doctor	Red Zone doctor
	# EU beds	10 EU beds	Red Zone nurse	Red Zone nurse
	# ICU beds	4 ICU beds	Green Zone doctor	Green Zone doctor
	# Operating Rooms	2 Operating Rooms	Green Zone nurse	Green Zone nurse
	# Hospital ward beds	250 Hospital ward beds	Triage Officer	Triage Officer

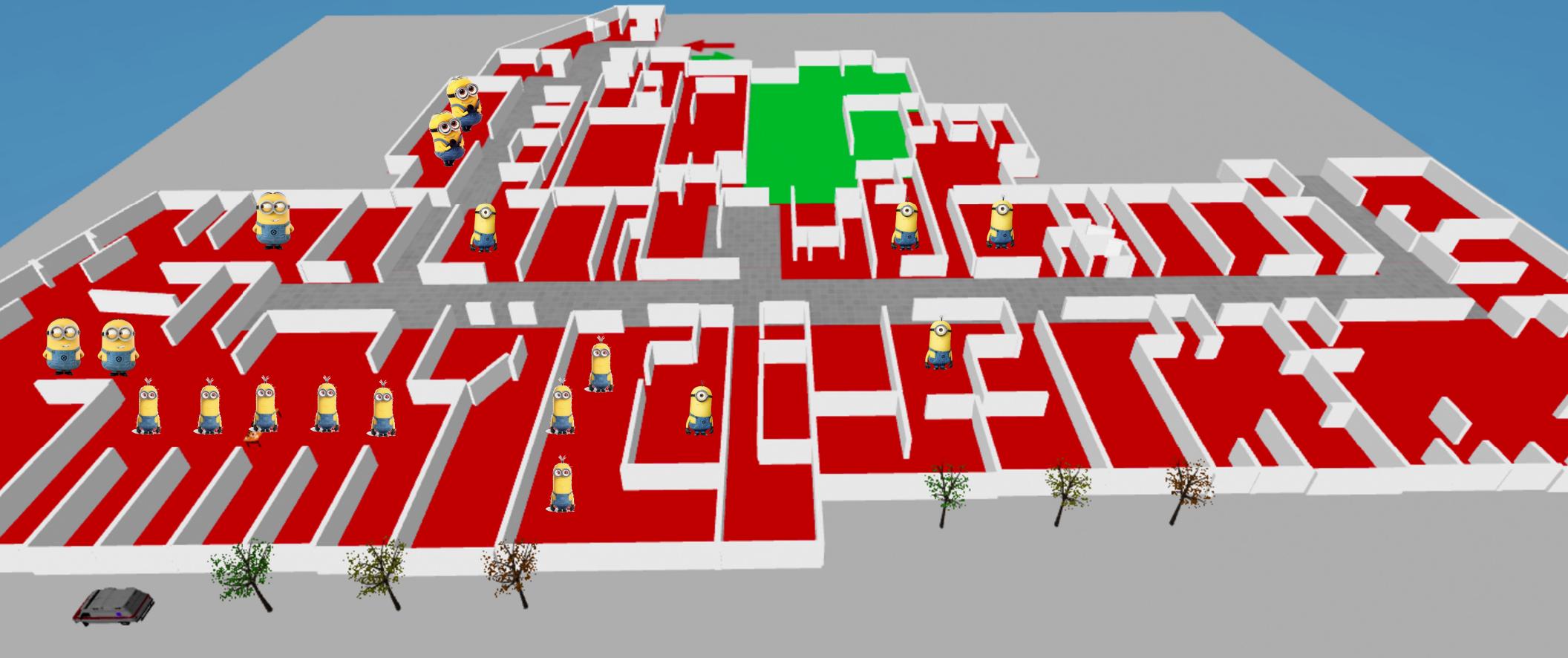
PLAYERS



Real Players	Virtual Players
1 Incident Commander	2 Doctors
1 Clinical Lead	8 Nurses
1 Resource Lead	2 Admin Staff
1 Red Zone Doctor	5 Auxiliary staff
1 Red Zone Nurse	









Triage Officer is assigned by the INCIDENT COMMANDER from one of the available virtual staff.

A virtual triage officer will correctly assign patients 99% (!?) of the time.

Moving patients from triage point to red zone requires the use of one auxiliary staff and one available bed. They need to be properly distributed BY THE RESOURCE LEAD.

Patients will follow the pre-defined paths / corridors (one way or both ways) until they reach an empty bay.





Red Zone doctor & nurse can click a patient as he/she arrives to the red zone. They work as a team. Both need to click so that both are treating the patient.

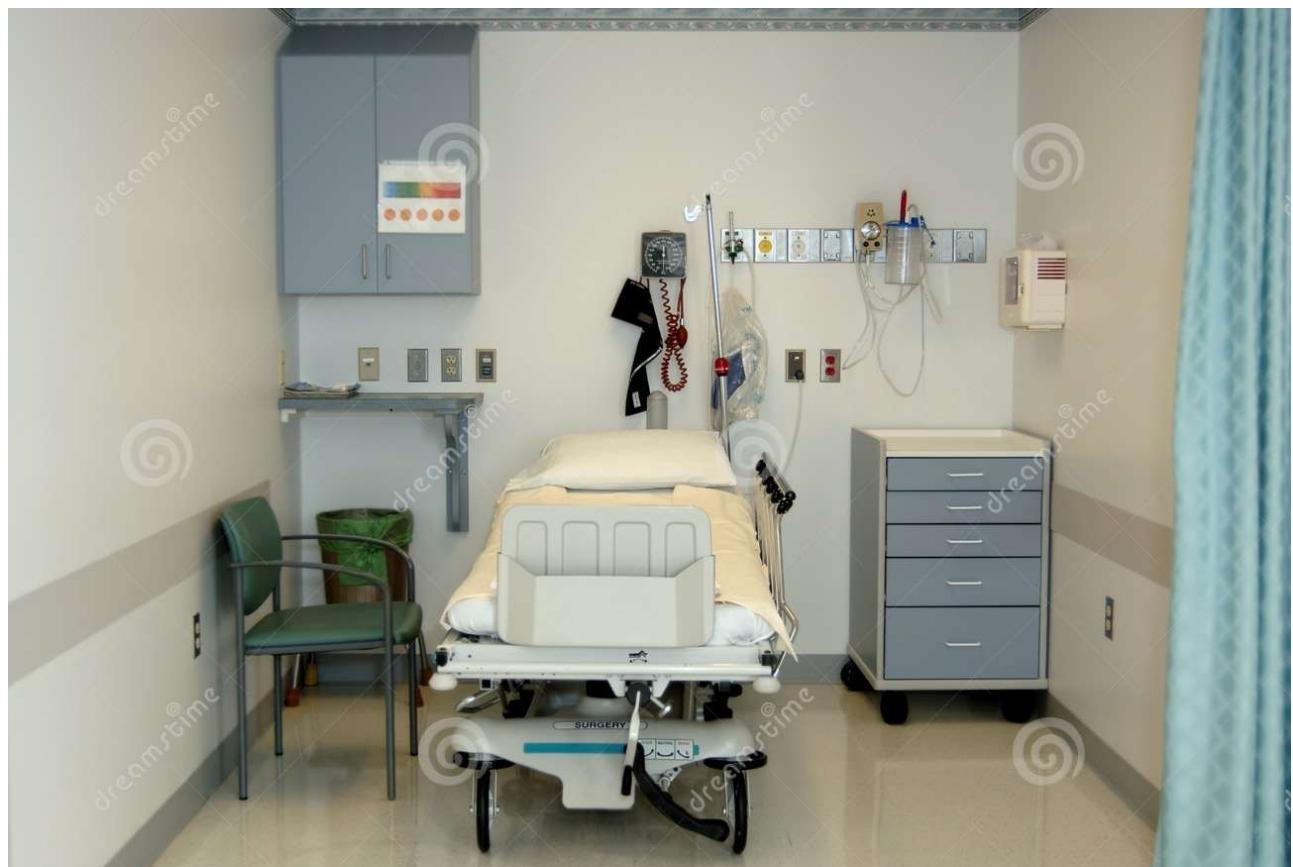


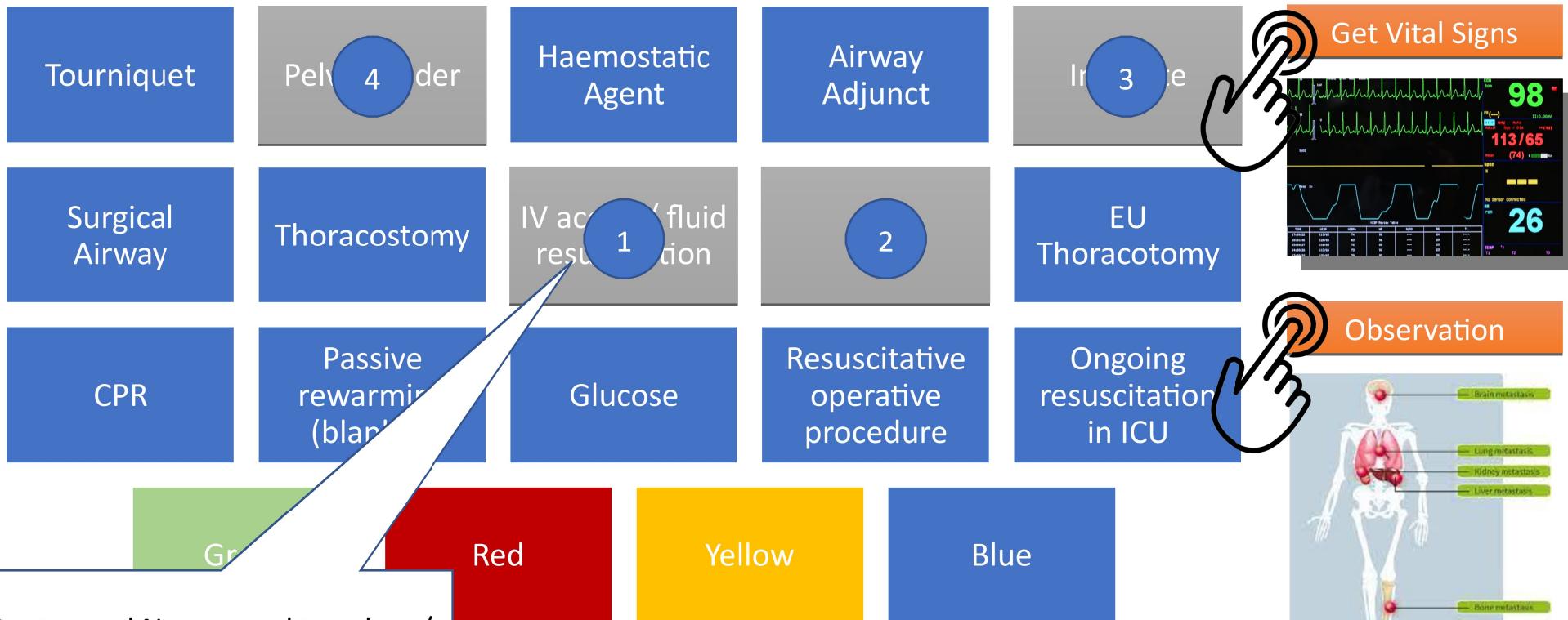


When clicking a patient in the **Red / Green Zone**, both doctor and Nurse dive into the room and see a selection panel

The selection panel, varies according to which zone the patient is:

- Triage (no dive)
- Green Zone
- Red Zone





Both Doctor and Nurse need to select / talk through the same procedures

Time needed

13 min



Tourniquet

Pelvic binder

Haemostatic Agent

Airway Adjunct

Intubate

Surgical Airway

Thoracostomy

IV access/ fluid resuscitation

TXA

EU Thoracotomy

CPR

Passive rewarming (blanket)

Glucose

Resuscitative operative procedure

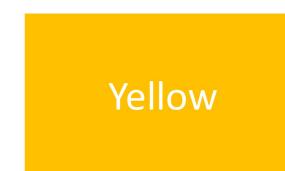
Ongoing resuscitation in ICU



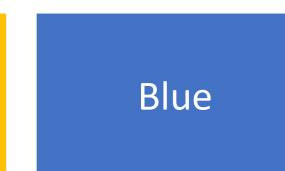
Green



Red



Yellow



Blue

Both Doctor and Nurse can resurface if another virtual minion team is available to take over and commit for 13 min.

Time needed

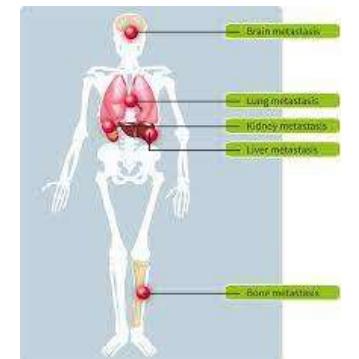
13 min



Get Vital Signs



Observation



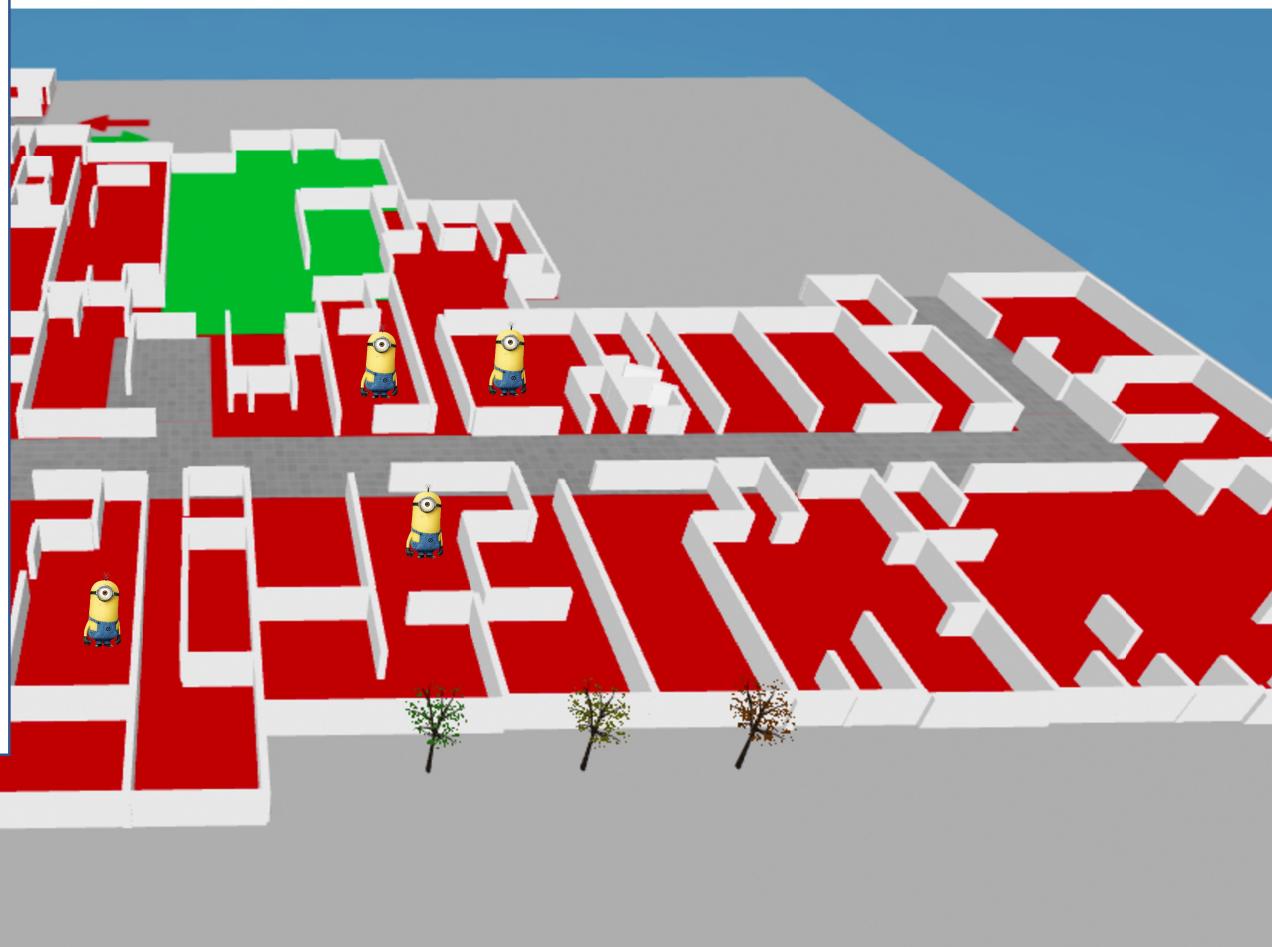


Red Zone doctor & nurse can select another patient.

Minions are seen working on the previous patient.

After "13 min" Doctor & nurse need to:

- Return
- Re-assess (new vitals)
- Select triage category
- Signal Clinical Lead for a final decision on triage and destination
 - Clinical lead dives in and assesses
 - Patient moves out if ICU / WARD BEDS / OT is available and if there is auxiliary staff available for transport





Correct positioning of Admin staff gives access to numbers of casualties. The more Admin staff in the right positions, the more info is available

