Hospital Preparedness for Novel Coronavirus (nCoV-2019)

Sukraraj Tropical and Infectious Disease Hospital, Teku

CDC Alert Level 2: Practice Enhanced Precautions

Reference document: WHO Interim Guidance (Draft version) January 2020

Effective from January 24, 2020

Total pages = 10

Introduction

There is ongoing outbreak or Novel Coronavirus identified in Wuhan, China. Since China is neighboring country is connected to Nepal with various trades and students. Therefore, it is necessary to activate the preparedness for the possible case in emergency of Sukraraj Tropical and Infectious Disease Hospital.

Person to person spread is occurring, although it is unclear how easily the virus spreads between people. Preliminary information suggests that older adults and people with underlying health conditions may be at increased risk for severe disease.

Cases for screening triage

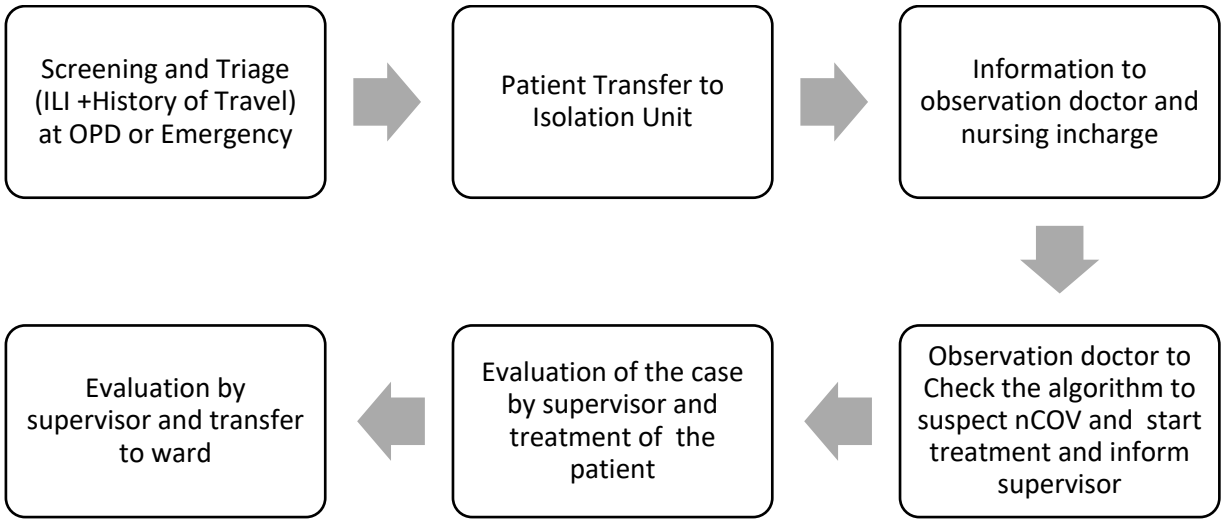
Patient with high grade fever, cough, shortness of breath should be screened at Triage.

AND

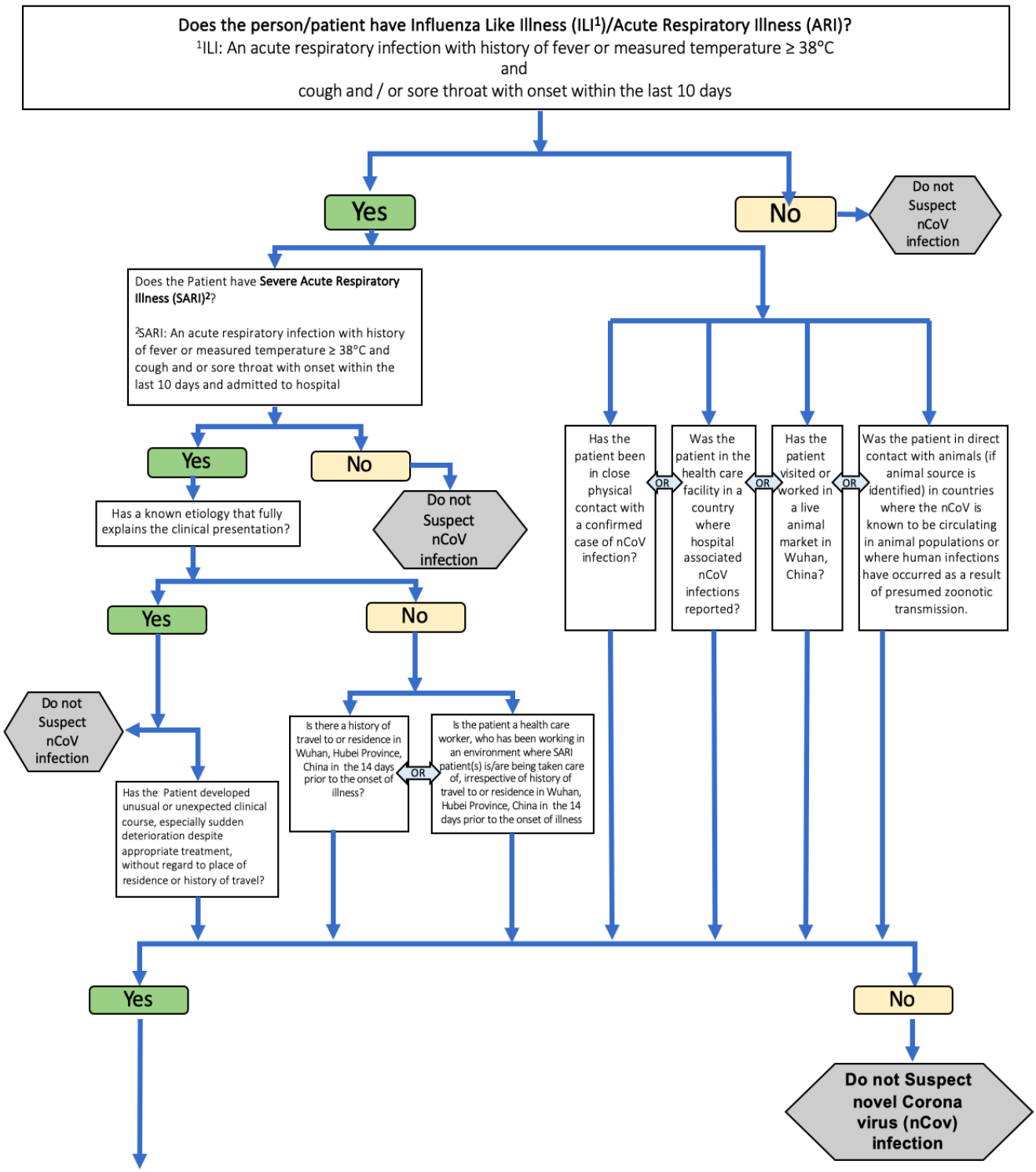
Screening Questions to be asked

- Have to you travelled to China recently (within 14 days)?
- Has anyone from your family returned from China recently?
- Have you come across anyone who have recently returned from China?
- Are you a health care worker?

- तपाइँ हालै चीन यात्रा गर्नुभयो?
- के तपाईंको परिवारबाट कोही हालसालै चीनबाट फर्केका छन्?
- के तपाई हालै चीनबाट फर्केका कसैलाई भेट्नु भयो?
- के तपाई स्वास्थ्य सेवाकर्मी हुनुहुन्छ?



Algorithm to suspect Novel Corona Virus (nCoV) infection based on the WHO Surveillance Case Definition*



[1&2]Case definitions used by NPHL/NIC and EDCD, Nepal

* WHO Surveillance Case Definition: https://www.who.int/docs/default-source/coronaviruse/20200115-surveillance-case-definitions-ncov-final.pdf?sfvrsn=bee0de9b_2&download=true

Government of Nepal
Ministry of Health and Population
Department of Health Services
Epidemiology and Disease Control Division

Isolation preparation

Human resource

The doctor who is in observation will be responsible for handling the patient transferred to GPU for isolation. A nursing officer who is assigned for Isolation ward will be responsible for this patient.

Bed arrangement

Patient will be kept in the specified room allocated, Red Patient will be kept at Room 2 and Room 5 as these have large space. Yellow and Green patients will be kept at Room no 1, 3 and 4 room

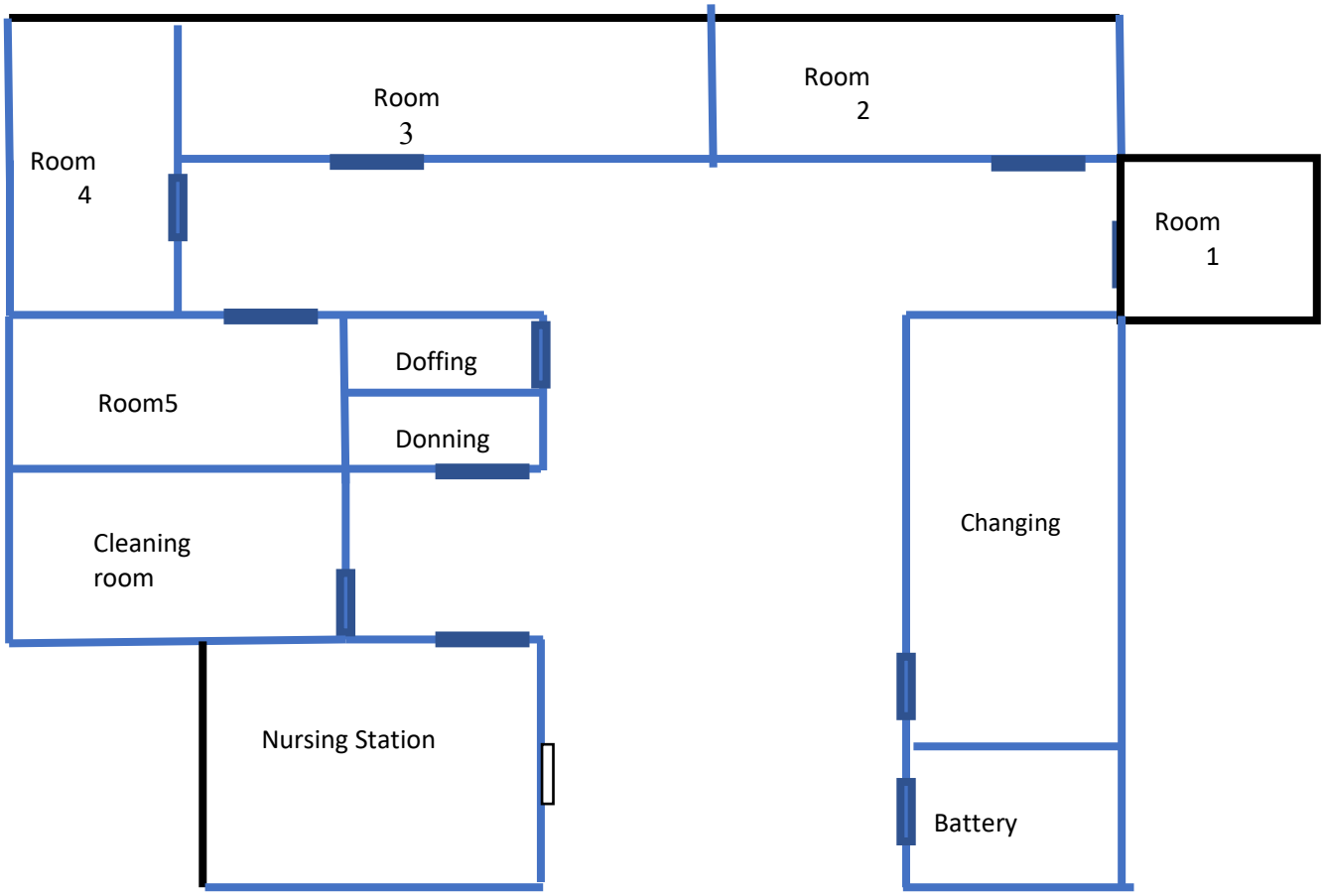


Figure 1 Floor plan for Isolation Facility

Equipment

Ten N95 mask	Thermometer -1
Ten eye shields	Crash cart with airway devices
Four full sleeve gowns	Swab stick for throat swab collection
Gloves 1 box	Vessel for sputum collection
Screen – 2	Blood collection tubes
Stethoscope -2	Zip lock bag – small
BP cuff -3	Zip lock bag – large for x ray plates

Roles and Responsibilities

Role	Responsibilities
Triage Officer/ OPD or Emergency Doctors	Triage officer will triage the patient and direct the patient to GPU and will inform observation doctor and Isolation Unit nurse
Observation doctor (Isolation Unit	The doctor will take history assess the patient, start primary management, document the findings and will inform on duty faculty(supervisor).
Medical Unit Supervisor	Emergency on duty faculty will assess and help managing patient; communicate with IPC, Medical on call record section and medical director.
Isolation unit nurse	Will help in primary management of the patient. The assigned nurse will also inform supervisor.
Official spokesperson	The condition of the patient will be briefed by medical director.

Safety precaution

Standard precaution for all patients

1. Medical mask for health care workers (and for patients is suspected nCoV and if can tolerate)
2. Gloves
3. Handwashing
4. Safe waste management
5. Environment cleaning

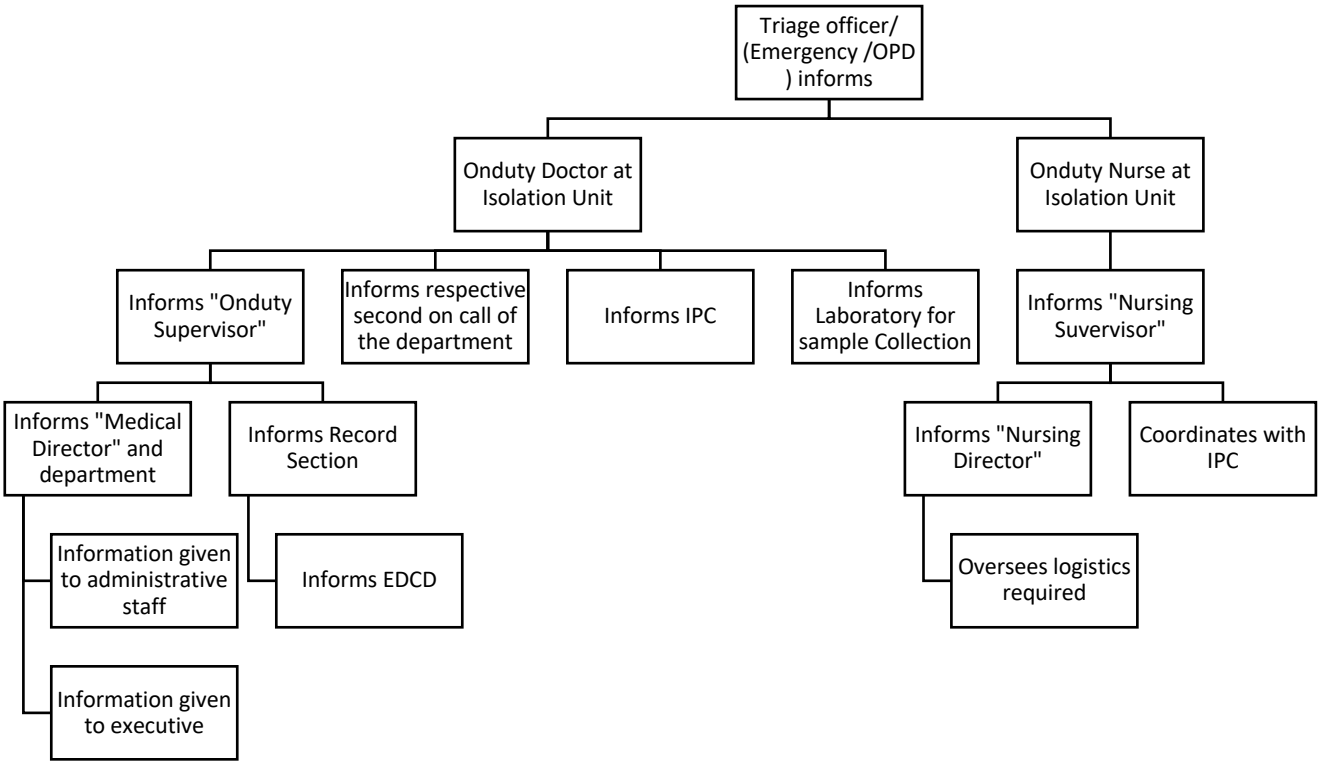
Contact precaution will be practices if the suspected patient comes to triage

1. Use a medical mask
2. Use eye/facial protection (i.e. goggles or a face shield)
3. Use gloves, Use a clean, non-sterile, long-sleeved fluid resistant gown and transfer the patient to Isolation Unit
4. Dispose gown in the disposal area and return to triage
5. Clean and disinfect BP cuff, Thermometer and Stethoscope between each patient use (e.g. ethyl alcohol 70%);
6. Limit the number of HCWs, family members and visitors in contact with a patient with suspected nCoV infection;
7. Maintain a record of all persons entering the patient's room including all staff and visitors.

Airborne precaution for health care worker in Isolation Unit

1. Use a particulate respirator at least as protective as a NIOSH-certified N95, or equivalent; when putting on a disposable particulate respirator, always perform the seal-check. Note that if the wearer has facial hear (beard) this can prevent a proper respirator fit.
2. Eye protection (i.e. goggles or a face shield);
3. Clean, non-sterile, long-sleeved gown and gloves;
4. If gowns are not fluid resistant, use a waterproof apron for procedures with expected
5. high fluid volumes that might penetrate the gown
6. Limit the number of persons present in the room to the absolute minimum required for the patient's care and support.

Communication



For effectiveness of this process, this document needs to be circulated to Hospital Director, Nursing Director, Medical Director, Administrative In charge and Chair Department of Medicine/Pediatrics.

Investigations

Laboratory

The required specimen will be collected by nursing GPU on duty. The specimen will be collected in standard tubes or containers which will be disinfected (e.g. ethyl alcohol 70%) and placed in Zip Lock bag and transferred to laboratory. The specimen that needs to be sent to National Laboratory will be kept in refrigerator at -4 degree centigrade.

The specimen received at lab will be processed by trained staff applying standard and contact precaution. The tube or container will be removed from zip lock bag and will be disinfected (e.g. ethyl alcohol 70%) and processed.

Investigations that needs to be sent

1. Complete Blood Count
2. Blood culture
3. Liver function test
4. Na, K, Creatinine
5. Arterial blood gas
6. Urine routine examination
7. Throat or nasopharyngeal swab
8. Sputum
9. Blood for antigen detection

Radiology

Patient cannot be transferred to radiology unit so a portable X ray will be brought to the GPU. The x-ray technologist needs to take airborne precaution. The X ray cassette will be placed in zip lock bag and brought to the GPU. After X ray is done the zip lock bag will be disposed and x ray cassette will be taken to the x-ray department for processing.

Management in Isolation Unit

Assessment	Management	Benchmark	Equipment required
Shortness of breath, respiratory distress, cyanosed, altered mentation	Oxygen via nasal prong @ 5lts per minute, if not maintaining improving→ upgrade to face mask 10 lts per minute, if not maintaining improving → upgrade to non-rebreathing bag at more than 10 lts per minute, if not maintaining improving → upgrade to BiPAP (if conscious) if not maintaining improving intubation and ventilation	1. Respiratory rate less than 22per minute 2. Work of breathing decreased 3. No cyanosis 4. Normal mental status	1. Nasal prong 2. Face mask 3. Non-rebreathing bag with mask 4. Ambu-bag different size mask 5. Laryngoscope with different size blades 6. Endotracheal tube with stylete 7. Jelly 8. Tie 9. Ketamine 10. Succinyl choline/Rocuronium 11. Laryngeal mask airway 12. Geudel airway 13. Sodium bicarbonate 14. BiPAP (use old machine) with mask 15. Oxygen tube 16. 10 ml syringe 17. 5 ml syringe
If wheeze	Salbutamol MDI 2 puff every 5-10 minutes via spacer or salbutamol+ ipratropium+ normal saline nebulization Inj Hydrocortisone 200 mg iv stat Inj Magnesium sulphate 2 gm iv	Decrease wheeze	1. Salbutamol MDI 2. Spacer 3. Salbutamol solution 4. Ipratropium solution 5. Hydrocortisone 200 mg 6. Inj Magnesium sulphate 2 gm 7. Normal saline 100 ml 8. Syringe 10 ml
Shock	Normal saline 20 ml/kg over 30 minutes and total of 60 ml/kg in two hour → if improvement maintain at 2 ml/kg/hour→ if not maintaining consider fluid at 5-10 ml/kg/hour and consider noradrenaline	SBP > 90 mmHg	1. Normal saline 2. 16 G iv canula 3. Leukoplast 4. Cotton swab 5. IV line 6. Noradrenaline 2 ampule (2mg/4ml – per ampule) + 500 ml NS start at 6-8 drops per minute
Antibiotics	Pipracilline+ Tazobatcum 4.5 gm iv stat		1. Pipracilline Tazobactum 2. 100 ml Normal saline 3. IV drip set
If fever	Paracetamol 1 gm orally or IV	Decease fever	1. Tablet Paracetamol 500 mg 2. Inj Paracetamol 1 gm
If bilateral diffuse crepitation	Inj Furosemide 40 mg iv – if not in shock	Decrease crepitation – increase urine output	1. Inj Furosemide 2. Syringe 5 ml 3. Foley catheter 4. Urobag 5. Xylocain jelly

Patient monitoring

Please fill up sick patient monitoring chart, every 30 minutes for RED triage patient.

Disposition

Will coordinated with IPC for the availability of the facility to manage the contagious patient. There needs to be clarity on who, when and where the patient be managed after emergency stabilization.
The structure of emergency and current resources limits the emergency to hold the patient for prolong period because of the safety concerns of other patient and staffs.

Patient transferal route (if admitted)

Patient will take exit from gate 2 of emergency, take a route in front of pharmacy and through the corridor of pharmacy will take a old lift to respective floor.

Health care worker training

1. Information sharing in common viber group
2. Mandatory online CME for all doctors and nurses
3. Safety precaution and roles orientation for all staffs

Annex: 1

Duty Roster

Date:

S no.	On Duty Doctor	Time
1.		
2.		
3.		
4.		
5.		
6.		
	On Duty Nurse	**Time**
1.		
2.		
3.		
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