



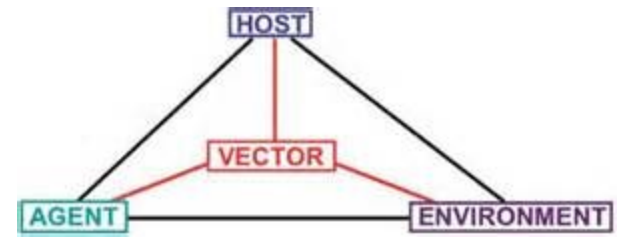
# Healthcare Preparedness to Outbreak ,Are we ready ?

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**M.S.Basharahil Hospital**  
**Makkah ; Saudi Arabia**



- **Clinical and Epidemiological evidences on MERS-CoV**
- **Clinical Picture**
- **The Magic What if?**
- **International and national Recommendation**
- **Local Preparedness**
- **Conclusion & Take home message**



# Clinical and Epidemiological evidences



# Line list 15 cases from Apr/12 to Feb/13

No.	Date of onset	Age	Sex	Probable place of infection	Outcome	cluster
1	2012.04.??	40	F	Jordan	Dead	Hospital A
2	2012.04.??	25	M	Jordan	Dead	
3	2012.06.06	60	M	Saudi Arabia	Dead	
4	2012.09.03	49	M	Qatar/Saudi Arabia	Alive	
5	2012.10.10	45	M	Saudi Arabia	Alive	
6	2012.10.12	45	M	Qatar	Alive	
7	2012.10.14*	70	M	Saudi Arabia	Dead	Family A
8	2012.10.28	39	M	Saudi Arabia	Dead	
9	2012.11.04	31	M	Saudi Arabia	Alive	
10	2013.01.24	61	F	Saudi Arabia	Dead	
11	2013.01.26	60	M	Saudi Arabia/Pakistan	Alive	Family B
12	2013.02.05	??	F	United Kingdom	Alive	
13	2013.02.06	??	M	United Kingdom	Dead	
14	2013.02.05	69	M	Saudi Arabia	Dead	
15	2013.02.24	39	M	Saudi Arabia	Dead	

## 2013 Jan~Feb – SA→UK – Family cluster



Index case: 60y male, travel to Pakistan (2012.12.16~2013.01.20) and Saudi Arabia (01.20~01.28), onset on 01.26, hospitalized on 01.31, co-infected with influenza A(H1N1).

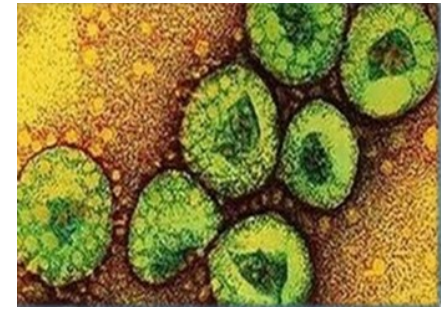
Adult female member of extended family, **limited exposure to the index case on three occasions in hospital (possibility of an intermediary case)**, onset on 02.05, mild influenza-like illness.

Adult male household member, in sustained close contact with the index case at home, pre-existing medical conditions, onset on 02.06, died on 02.17.

Saudi Arabia

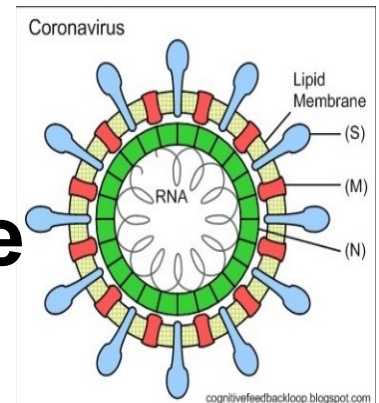


# The Virus (Corona)



❑ Large Family of Viruses that cause a range of illnesses in Humans (common cold) to the severe acute respiratory Syndrome (SARS)

❑ Recently responsible for the MERS







# Signs & Symptoms

- ❑ Most People who become infected developed severe respiratory illness with symptoms like :
  - ❑ Fever  $> 38^{\circ}\text{C}$
  - ❑ Cough
  - ❑ Shortness of Breath
  - ❑ Respiratory illness rapidly progressive pneumonitis, respiratory failure, septic shock and multi-organ failure resulting in



# Case Definition





# Suspected case

Current case definition for suspected case:

- Any person with severe acute respiratory infection, with:
  1. Fever, cough, and evidence of pulmonary parenchymal disease
  2. And not already explained by any other infection or etiology
  3. And admitted to hospital
  4. And one of the following:
    - With history travel within 14 days before onset in a country who reported local cases
    - Or contact history with a person with ARI who traveled in a country who reported local cases
    - Or HCW caring for patients with severe ARI
    - Or the case occurs as part of a cluster.



# Probable case (UI)

- ❑ Any possible case with close contact during the last 10 days before onset of illness with a symptomatic confirmed case of novel coronavirus infection.
- ❑ Close contact is defined as:
  - Anyone who provided care for a nCoV patient
  - Or anyone who stayed at the same place while a nCoV patient was ill.



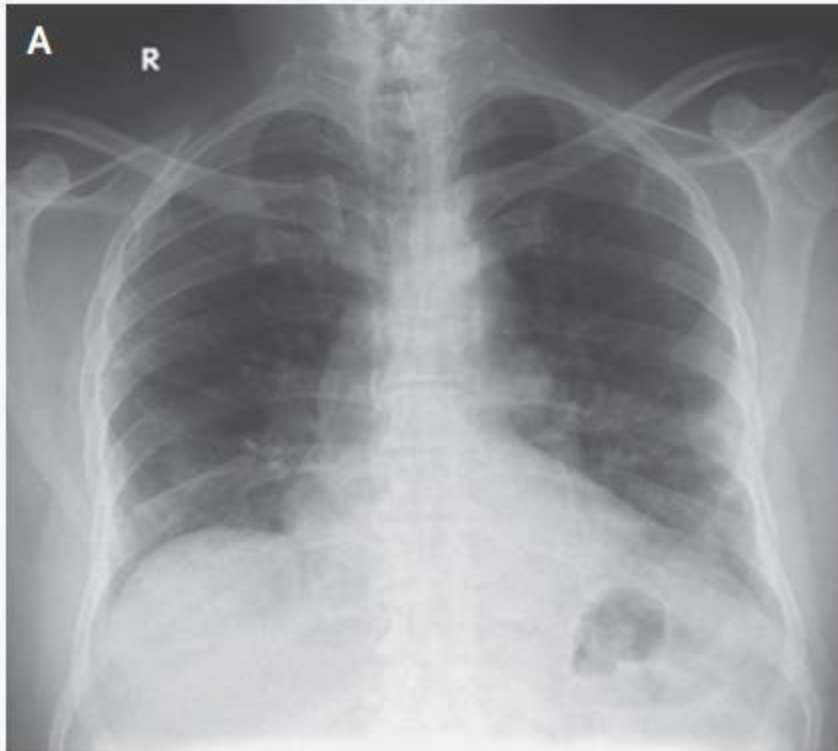
# Confirmed case

- Any person with positive laboratory confirmation of infection with novel coronavirus

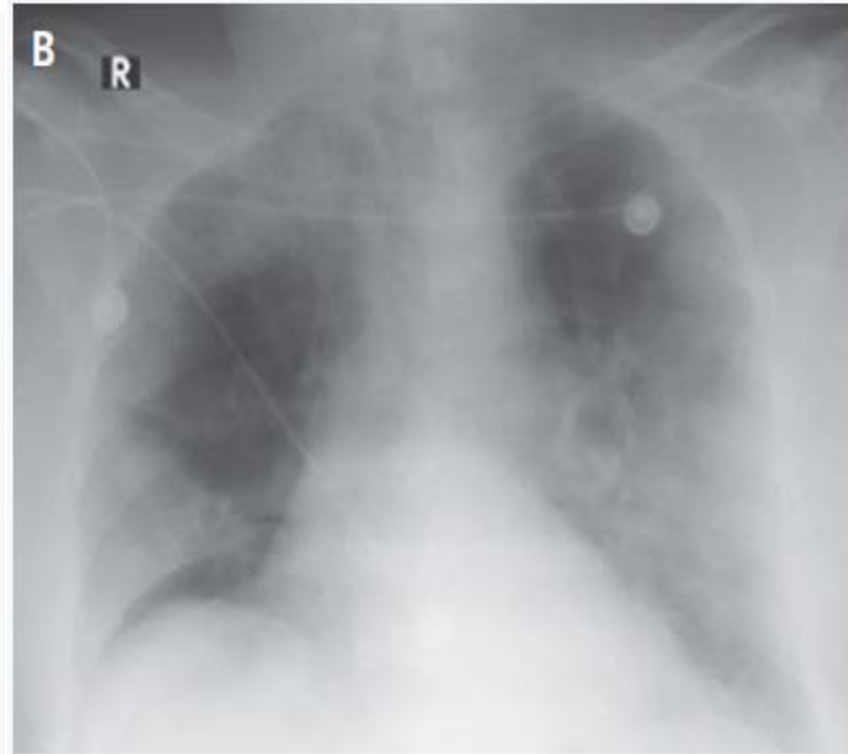


**60 year-old man from Saudi Arabia**

**7 days of fever, cough, shortness  
of breath**



Hospital Day 1



Hospital Day 3



# MERS-CoV: Clinical

## **Range of presentations\***

- 62% severe respiratory illness
- 5% mild symptoms
- 21% asymptomatic

## **Data from early cases High mortality**

- Lower respiratory tract illness,
- fever

## **Data from more recent cases**

- Lower mortality
- Higher proportion with upper respiratory tract illness
- No vaccine, no specific treatment

**Cases with available data through 5/9/14;WHO**



# M.S.Basharahil Hospital

## The Issue of MERS-CoV Raised Concern – Board of Director

## Ministry of Health

## Staff





**خدمة فندقية مميزة**

### مستشفى محمد صالح باشرأهيل

#### نبذة عن المستشفى

تأسس مستشفى محمد صالح باشرأهيل في سنة 1408 هـ بمجهود شخصي من صاحبه الشيخ محمد صالح باشرأهيل بركة الله . وقد تم افتتاحها بالنيابة عن خادم الحرمين الشريفين صاحب السمو الملكي الأمير ماجد بن عبدالعزيز -رحمه الله - أمير منطقة مكة المكرمة السابق.

وترتكز المستشفى في تقديم الخدمات الطبية على ركائز قوية وسامية ، تعمل في تقديم أفضل الخدمات الطبية للمرضى من خلال كوادر طبية مؤهلة بعبارة جيدة ، وأسعار مناسبة وبأعلى معايير ، وأقسام خدمات فنية ممتازة . ومستشفى باشرأهيل عضو في منظمة المستشفيات الأمريكية . وتعتبر مستشفى باشرأهيل من المستشفيات الخاصة المتميزة والمتكاملة والمنطقة على مستوى مكة المكرمة .

#### رسالة مستشفى محمد صالح باشرأهيل ( خدمات طبية متميزة )

##### رؤيتنا

- رائدة في الخدمات الطبية بمكة المكرمة .
- تتميز في المخطط على حقوق المرضى وساعاتهم .
- الحصول على الاعتراف بالجودة على المستويين المحلي والدولي .
- الاستمرار في تطوير وتحديث الخدمات الطبية .

##### قيمنا

- الخدمة : إبقاء المرضى .
- البصيرة : الالتزام والالتزام بالعلم إلى الأبد .
- التفاني : الجميع يشترك في جودة خدمة المرضى .
- الاحترام : التعامل بين الموظفين والمرضى .
- العمل الجماعي : لتقديم خدمة طبية متميزة .
- خدمة المرضى : الرعاية والمحافظة على خدمة المرضى والمراجع .

#### خدمات طبية متميزة



# What if ?

Approach



**Is the Facility  
Ready to ?**



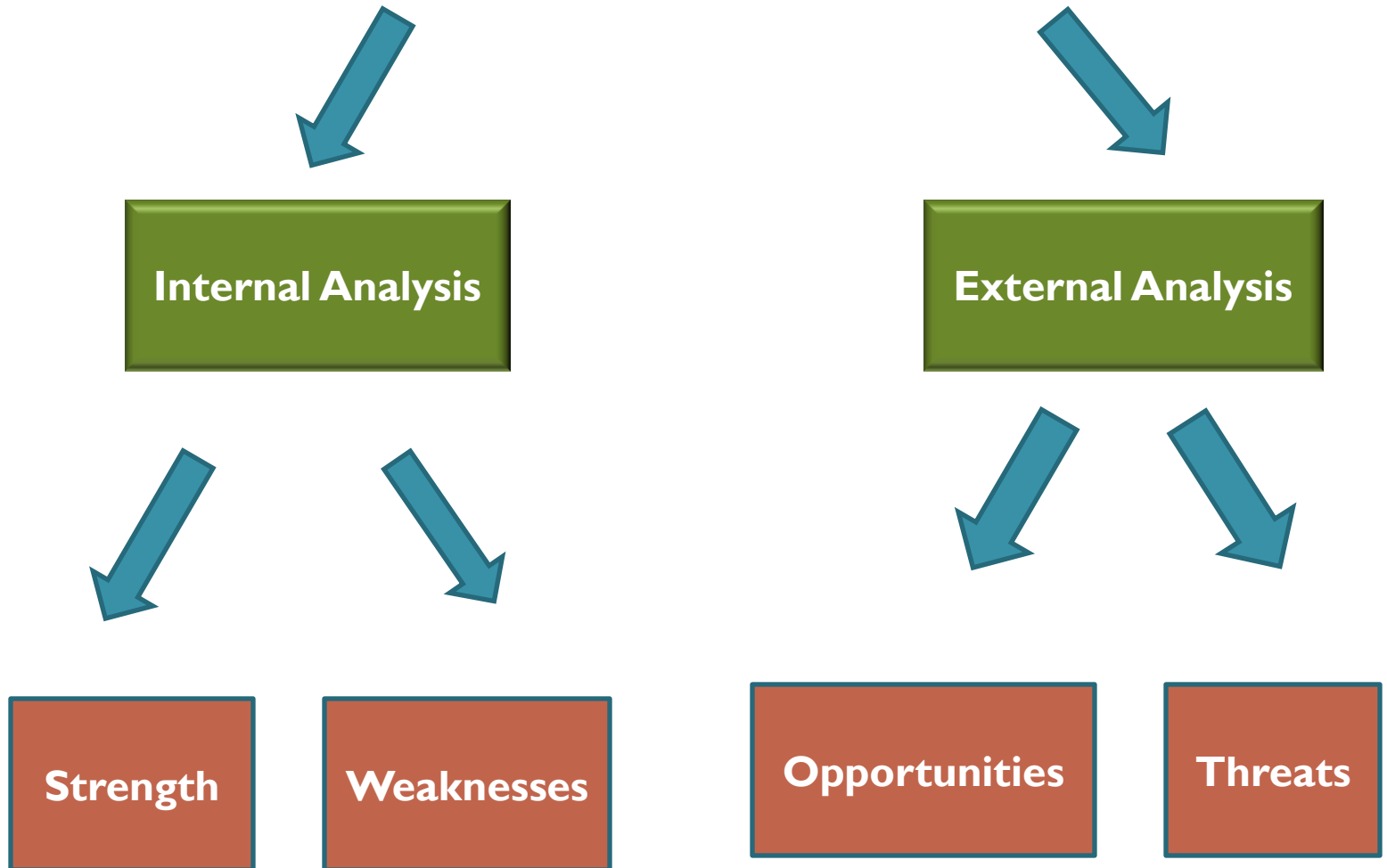
**Communication**

**Guidelines  
Processes  
References**





# Situational Analysis





# Analysis (SPO)

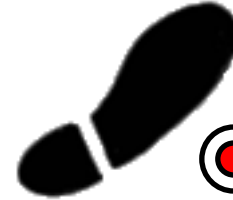
Protect Patient and staff



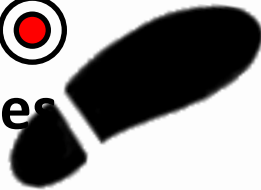
Step 4  
Department



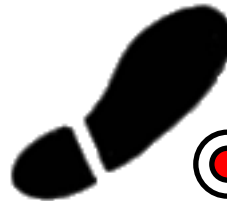
Step 5  
Committee



Step 2  
Resources



Step 3  
Facility



Step 1  
Structure



**Start**



# Questions ?

- Preparedness **Before** a patient arrives to the hospital
- Components of **Patient Management Plan**
- Guideness for **exposure-Follow-up** in acute care setting
- **Screening Algorithm**
- Staff **Awareness** and **Compliances**
- **References**



# Questions Reply (SPO)

- Establish a Task Force ( sub team from Infection Control Committee )
- Establish the Plan with all plan components ( Mission-Vision-Value-Objectives-Resources-P&P)





# Task Force Obligation

- Unlimited , Open Meetings
- Plan
- Resources ( Leadership included )
- Policy and Procedures
- Training
- References

# BASHARAHIL HOSPITAL INFECTION CONTROL MANAGEMENT PLAN FOR COUNTER ACT MRES-COs



Mission

Vision

Objectives

Scope

Responsi  
bilities

Resources

Time Frame

Dissemination

Education

P&P

References





# Policy and procedures

- 8.1 Suspected patient
- 8.2 Person in contact
- 8.3 Environmental and engineering controls
- 8.4 . Personal Protective Equipment (PPE):
- 8.5 Infection prevention and control when caring for patients with ARI
- 8.6 Infection Prevention and control precautions when caring for patient with suspected , probable or confirmed MERS-CoV Infections
- Reporting of suspected patient within the hospital and to the Ministry of health
- 8.7 Patient placement
- 8.8 Patient transfer within the facilities and to other healthcare facility
- 8.9 Duration of isolation precautions for MERS-CoV infection
- 8.10 Health care worker protection
- 8.11 Aerosol Generating Procedure
- 8.11 Staff awareness and education
- 8.14 Patient and family education
- 8.15 environment of care after patient discharge



وزارة الصحة  
Ministry of Health



CENTERS FOR DISEASE  
CONTROL AND PREVENTION





# Preparedness Before the First MERS-CoV Patient arrives

## Surveillance

**Establish Institutional Responsibility for tracking information about MERS-Cov-( and other emerging pathogens )**

## Education

**ED Staff**

**Audit & Screening Triage Area**

**Patient Information**



# Preparedness Before the First MERS-CoV Patient arrives

## Laboratory Readiness

- A notification system for laboratory regarding suspect patients
- A mechanism for notification and prompt delivery of specimens from suspected patients to your public health laboratory

A system for communicating results to relevant staff and departments; **MERS-CoV result should be treated as a critical result**



# Preparedness Before the First MERS-CoV Patient arrives

## Planning

Develop a patient management plan.



# Component of Patient Management Plan

## Accommodation

- ☐ Identify appropriate room in ED for patients being investigated for disease.
- ☐ Establish timeline for movement of patient out of ED if admission is required.



# Additional Precautions

- ☐ Patients should be accommodated in an airborne infection isolation room (AIIR) when possible.
- ☐ Health care workers should use both Droplet/Contact and Airborne Precautions (i.e., use of gown, gloves, eye protection, N95 respirator\*).
- ☐ Patients should wear a surgical mask during transportation, if tolerated.
- ☐ Ensure that precautions are initiated whenever a case is suspected; precautions to be discontinued by infection prevention and control staff or their designate when case is cleared.



# Diagnosis

- ❑ Document the process for confirming that patient meets the case definition and requires testing.

- Consider availability of materials to remind staff how to obtain specimens using appropriate precautions.

- Document the process and communications required for rapid transport and testing of relevant specimens.



# Communication

☐ Notify local health Authorities unit and public health laboratory.

☐ Notify pre-designated internal stakeholders as per plan (**e.g., senior management team**)

☐ Healthcare Worker -

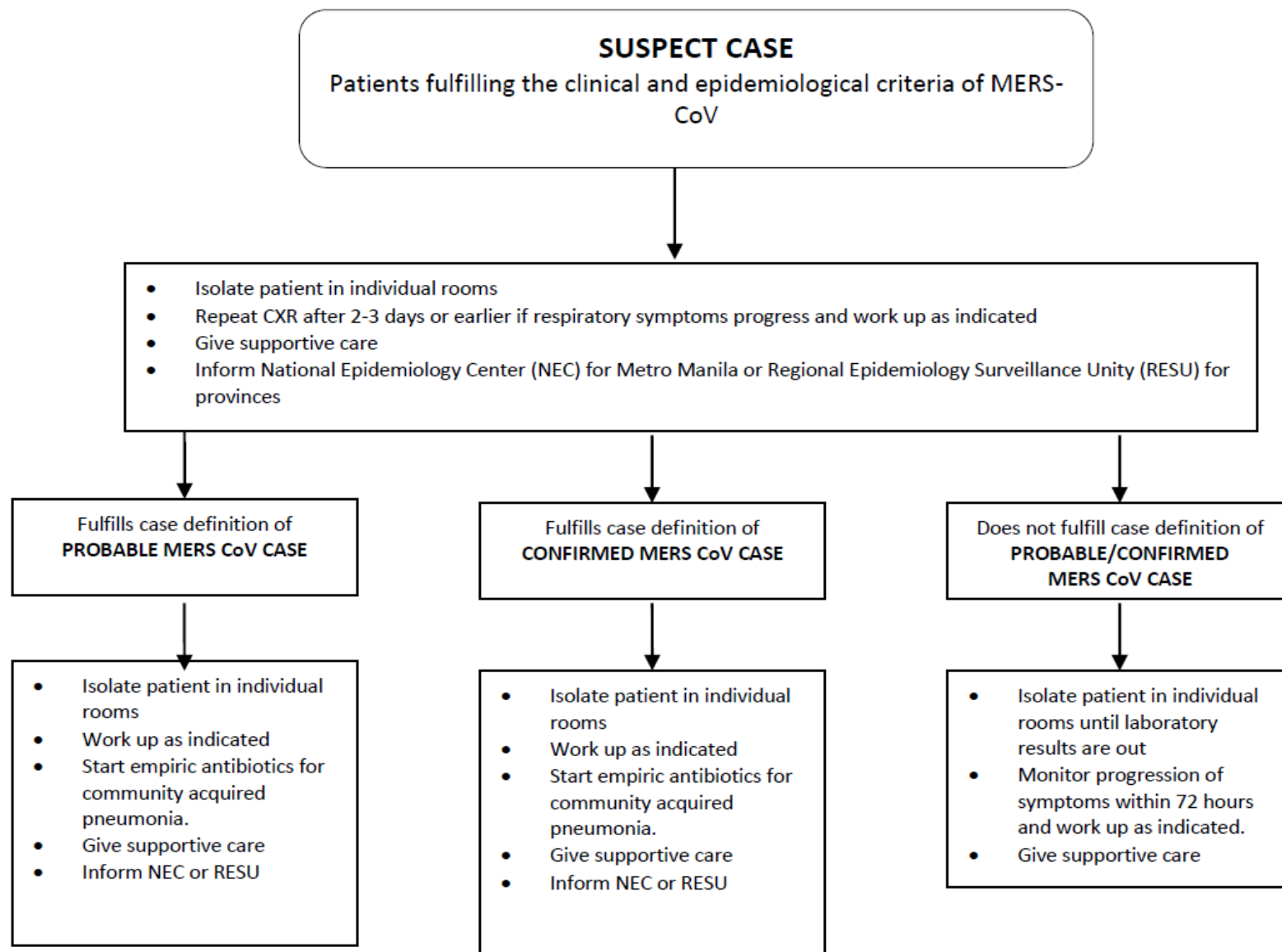




# Education/Training

- ☐ Establish mechanism for updating institution's knowledge regarding status of MERS-CoV
- ☐ Define what materials will be needed (e.g., Q&A for ED/ICU staff; email to senior management)
- ☐ Define which hospital departments may be providing care and/or provide diagnostic services for the patient and require information
- ☐ Draft messages/ information needed for family and visitors, in collaboration with local public health unit.
- ☐ Report any occupational illness to the Ministry of Health

# GENERAL MANAGEMENT PROCEDURE FOR SYMPTOMATIC PATIENTS WITH EXPOSURE HISTORY TO MIDDLE EAST RESPIRATORY SYNDROME CORONA VIRUS





Documents	Availability
1. List of Infection Control Staff	<input type="checkbox"/>
2. CVs of Infection Control Staff	<input type="checkbox"/>
3. Training Certificates of Infection Control Staff	<input type="checkbox"/>
4. Accreditation Certificate (if applicable)	<input type="checkbox"/>
5. MOH License	<input type="checkbox"/>
6. Written Infection Control Manual	<input type="checkbox"/>
7. Latest Infection Control Audit Report	<input type="checkbox"/>
8. MERS-CoV Guideline Policy	<input type="checkbox"/>
9. MERS-CoV Reporting forms	<input type="checkbox"/>
10. Respiratory Protection Program Policy/Guidelines	<input type="checkbox"/>
11. List of Staff attended the Respiratory Protection Program	<input type="checkbox"/>
12. Respiratory Fit Testing Guidelines	<input type="checkbox"/>
13. List of Staff Attended the Respiratory Fit Testing Training	<input type="checkbox"/>
14. Medical Records of MERS-CoV +ive Patients	<input type="checkbox"/>
15. Visitor Policy/Guidelines	<input type="checkbox"/>
16. Town hall Meeting Minutes for MERS -CoV Awareness	<input type="checkbox"/>
17. Infection Control Training Records	<input type="checkbox"/>
18. Copy of latest Surveillance Report	<input type="checkbox"/>
19. PPE Supply Chain Plan	<input type="checkbox"/>
20. Patients Movement Policy/Guidelines	<input type="checkbox"/>
21. Aerosol Generation Procedures Policy/Guidelines	<input type="checkbox"/>
22. Policy/Guidelines of Handling suspected MERS Co-V Patients in the Triage	<input type="checkbox"/>
23. Policy/Guidelines for Environmental Services	<input type="checkbox"/>
24. Flow Chart with Policies & Procedures for Suspected or Confirmed MERS-CoV Patients	<input type="checkbox"/>

# CORONA VIRUS

Middle East Respiratory Syndrome- Coronavirus (MERS-CoV)

According to the recommendations of the specialized scientists who attended the International Medical Meeting in Riyadh

## HOW CORONA VIRUS DOES TRANSMIT BETWEEN PEOPLE?

MERS-CoV transmits like other Corona viruses and Flu, which transmits through:

- 1 Direct contact with infected patients.
- 2 Droplets during the patient's coughing or sneezing.
- 3 Contact with patient's tools then touching the nose, mouth or eyes directly.
- 4 Possibly Transmitted by infected Camels.

## WHAT ARE THE POSSIBLE PROTECTION MEASURES FOR CORONA VIRUS?

Wash your hands well and continually with water and soap, or other hand disinfectants, especially after coughing, sneezing, using toilets, before handling/ preparing food, and after contact with patients or their personal tools.



Avoid contact with patients and their personal tools, and use face-masks only if you're sick or visiting sick patients.



Use a tissue when coughing or sneezing, then get rid of it in a waste basket. After that, wash your hands carefully. If there is no tissue, it is preferred to cough or sneeze into your upper sleeve or elbow, not your hands.

Avoid touching your eyes and/or nose as much as possible.

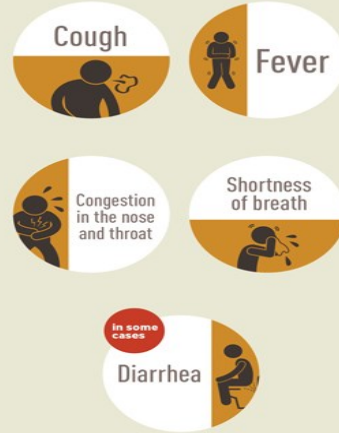


Wash vegetables and fruits thoroughly before eating them.



Maintain other healthy habits such as balanced diet, physical activity, as well as getting enough sleep; this will strengthen immunity.

## WHAT ARE THE SIGNS AND SYMPTOMS OF CORONA VIRUS INFECTION?



## ما هي طرق الوقاية من فيروس كورونا؟

لا يعرف حتى الآن الكثير من خصائص وطرق انتقال عدوى هذا الفيروس، وتنسق الوزارة مع منظمة الصحة العالمية وعدد من الخبراء الدوليين لمعرفة المزيد حوله، وإلى أن يتم التعرف على طرق انتقاله، فتتصحح وزارة الصحة المواطنين والمقيمين بالتقيد بالإرشادات الصحية للحد من انتشار الإنفلونزا والالتهابات التنفسية البعدية بشكل عام وهي:

المداومة على غسل اليدين جيداً بالماء والصابون أو المواد المطهرة الأخرى التي تستخدم لغسيل اليدين، خصوصاً بعد السعال أو العطاس



استخدم المنديل عند السعال أو العطاس، ثم تخلص منه في سلة النفايات، ثم أغسل يديك جيداً، وإذا لم يتوفر المنديل فاستخدم أعلى الذراع وليس اليدين



حاول قدر المستطاع تجنب ملاسمة العينين والأنف والفم باليد، فاليد يمكن أن تنقل الفيروس بعد ملاسمتها للأسطح الملوثة بالفيروس



تجنب قدر الإمكان الاحتكاك المباشر بالمصابين ومشاركاتهم في أدواتهم الشخصية



لبس الكمامات الواقية يكون فقط في حالة الإصابة بأي مرض أو عند زيارة الحالات المصابة



للحفاظ على النظافة الشخصية مع الحرص على نظافة الأسطح والأرضيات



حافظ على العادات الصحية الأخرى كالنظام الغذائي والنشاط البدني وأخذ قسط كافٍ من النوم



مع ضرورة مراجعة الطبيب عند الضرورة، ومتابعة ما يستجد من معلومات حول المرض من قبل وزارة الصحة



Do you have any inquiry . . ?

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/SaudiMOH  
/SaudiMOH  
www.moh.gov.sa/coronanew



World Health Organization

وزارة الصحة  
Ministry of Health

وزارة الصحة  
Ministry of Health

منظمة الصحة العالمية

الإدارة العامة للملفات والإعلام والتوعية الصحية  
إدارة التوعية الصحية

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/SaudiMOH

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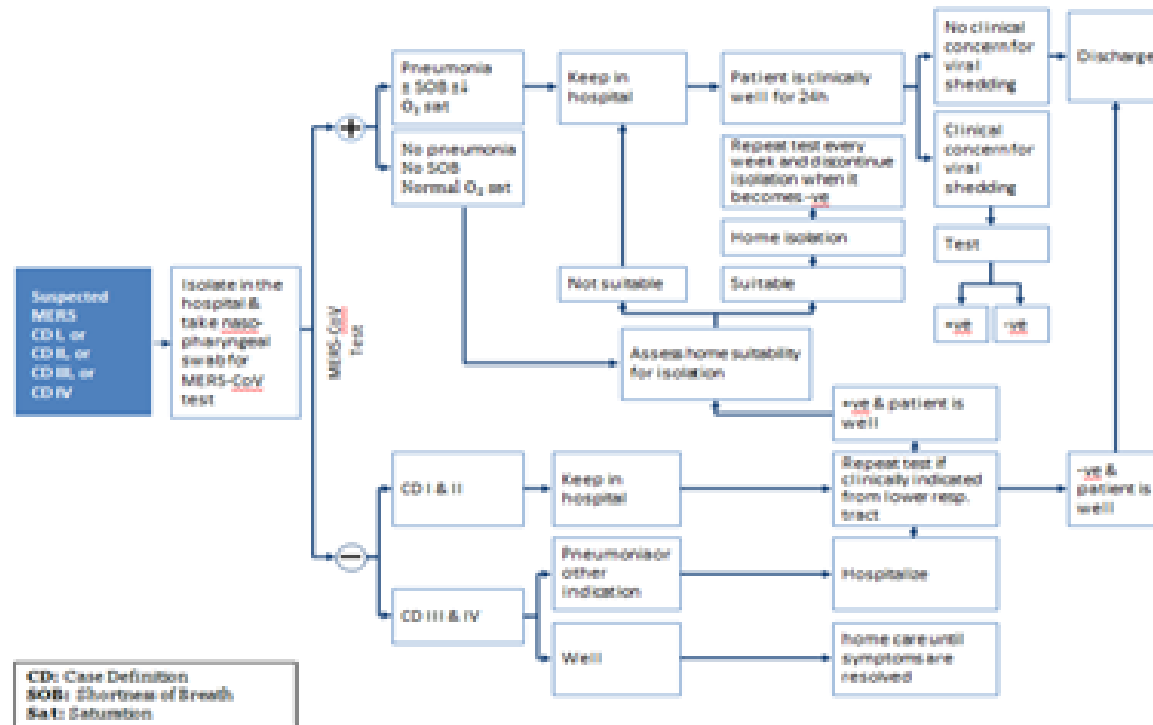
لديك استفسار . . ؟



# GENERAL MANAGEMENT OF PATIENTS UNDER INVESTIGATION FOR SEVERE RESPIRATORY DISEASE ASSOCIATED WITH MERS CORONAVIRUS



## Algorithm





# Training Materials

## Nasopharyngeal Swab



# MERS-CoV ( August 2014 )

Description	Number
Total Cases (2012-2014)	723
Cured Cases	398 ( 60%)
Died Cases	300
Under Treatment	25

Month	Number
May 2014	209
June 2014	28
July 2014	10
August 2014	2





مركز القيادة والتحكم  
Command & Control Center



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CCC Awareness Publications Coronavirus (MERS-CoV) Brochures



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Sectors Information

CORONA  
VIRUS (MERS-CoV)

Health Guidelines



Cough and Sneeze Etiquette



Important Information about (MERS-CoV)

## Ways of Protection against the Virus

# CORONA VIRUS

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# Lesson Learned



**Ebola**



# Road to Successes

- **Leadership support**
- **Structure Program**
- **Focus on Education**
- **Communication**



*\*Take  
home message*



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[Eddaal14@hotmail.com](mailto:Eddaal14@hotmail.com)

## References

<http://www.moh.gov.sa/en/HealthAwareness/Corona/PressReleases/Pages/MediaStatement-2013-07-02-001.aspx>

<http://www.cdc.gov/coronavirus/>

[http://www.who.int/csr/don/archive/disease/coronavirus\\_infections/en/](http://www.who.int/csr/don/archive/disease/coronavirus_infections/en/)