

EVD algorithms

Dr Derval Igoe

On behalf of

HPSC Ebola Virus Disease

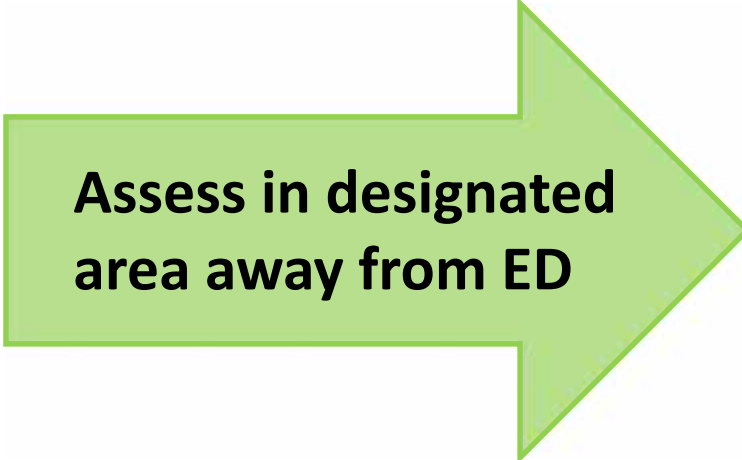
Scientific Advisory Committee

Overview

- Set context for discussion of three scenarios
- Describe pathways for how suspected cases present to hospital
- Brief overview of main points of acute setting algorithm
- Clinical care pathway - adult

Acute hospital setting: Pathways to hospital

1. GP
2. Ambulance service
3. Public Health



**Assess in designated
area away from ED**

4. Self presentation
– No prior warning



Presents in ED

GP Pathway (1)

Patient contacts GP by phone (or presents in surgery)

Fever + travel history to affected area

No alternative diagnosis apparent



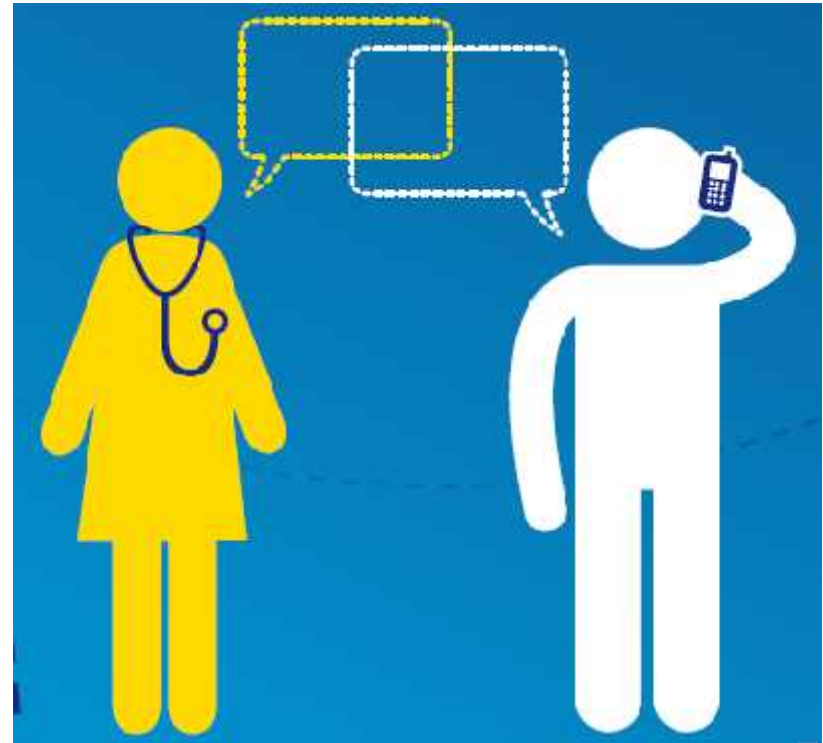
GP contacts **designated hospital EVD contact**

Arranges ambulance transfer, if required

Contacts Public Health



RISK ASSESSMENT IN CONTROLLED ENVIRONMENT IN ACUTE HOSPITAL





Ambulance service pathway (2)

Patient with travel history and fever

NAS contacts NIU directly

Remote risk assessment

High Risk Exposure

Assessment in NIU

**NO High Risk
Exposure**

**Ambulance contacts local
designated hospital EVD contact**

**ASSESSMENT IN CONTROLLED
ENVIRONMENT IN ACUTE
HOSPITAL**

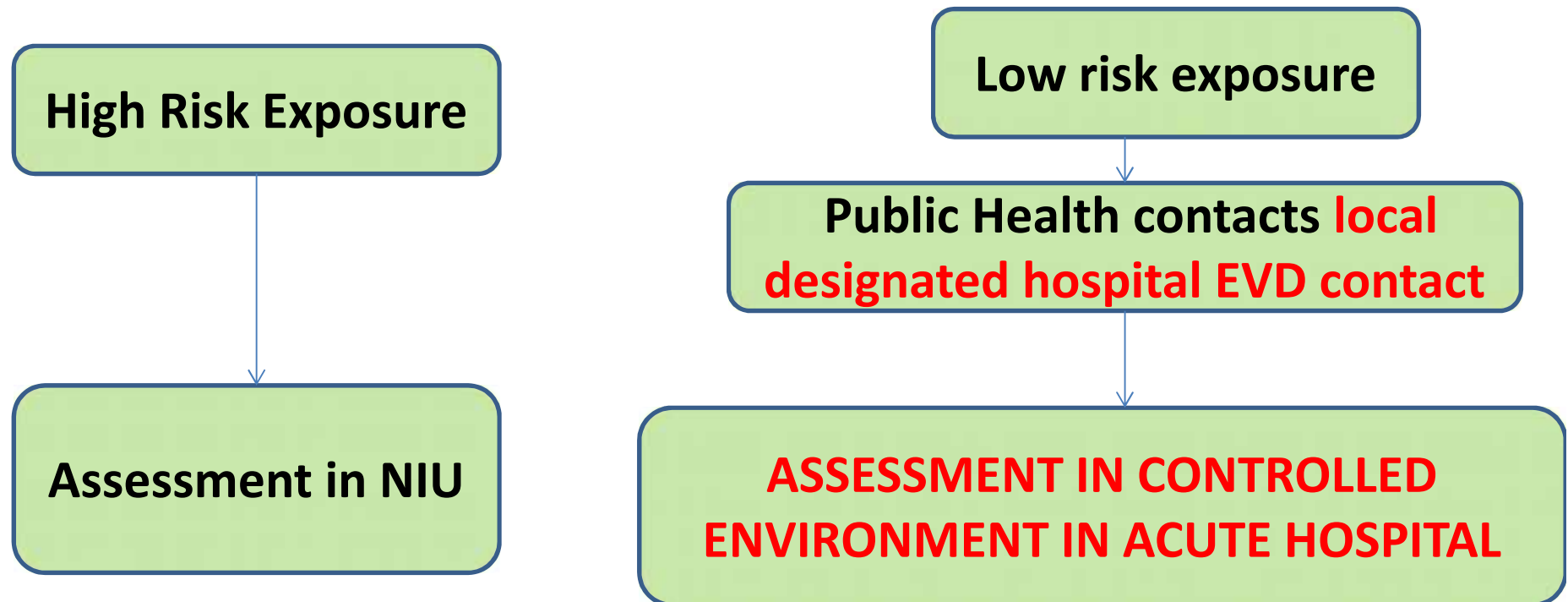


Public Health pathway (3)

Contact monitoring – high and low risk exposures
(mainly HCW returning from affected countries)

Fever+/- other symptoms

Refer for medical evaluation



Presentation to Emergency Department (ED) directly (4)

- Raise awareness in waiting areas
- Triage: Ask re fever and travel history



Pathways to hospital

- Identification of **local designated hospital EVD contact (24/7)** is key preparedness activity for each receiving hospital
- Provide this contact to
 - Local GPs
 - Ambulance Service
 - Public Health

Acute hospital setting algorithm

For use:

- When assessing patients with prior notification (controlled environment)

AND

- If patient with travel history and fever arrives without prior warning to ED department

Acute hospital setting algorithm

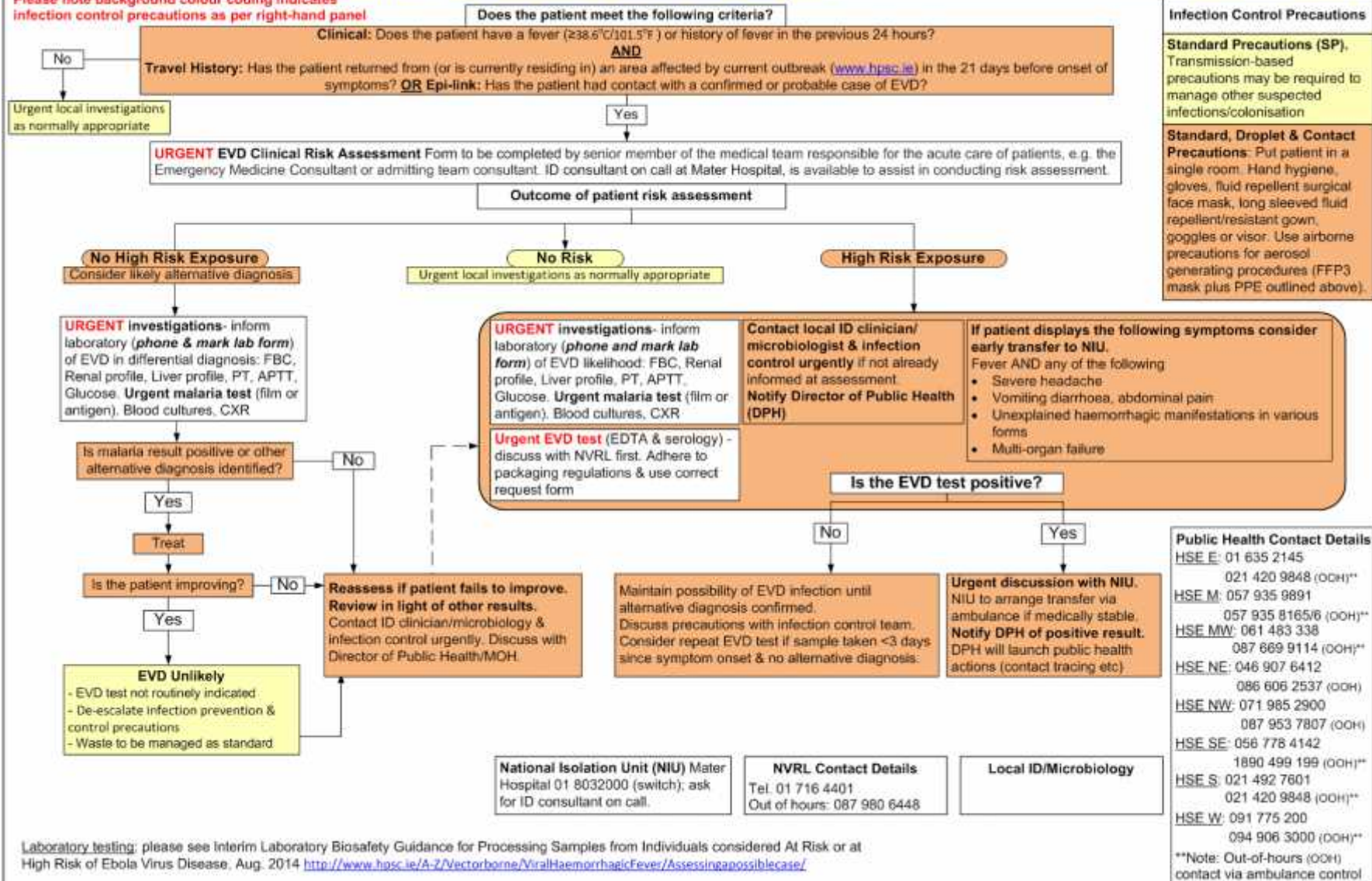
Principles:

- Consider clinical circumstances
 - Algorithm should not impede delivery of safe and effective clinical care
-
- Put patient in single room
 - Explain the process to the patient
 - Work to avoid the patient feeling frightened or alone/abandoned in the room
 - Apply standard, contact and droplet infection control precautions

Ebola Virus Disease Risk Assessment for use in Hospital Settings

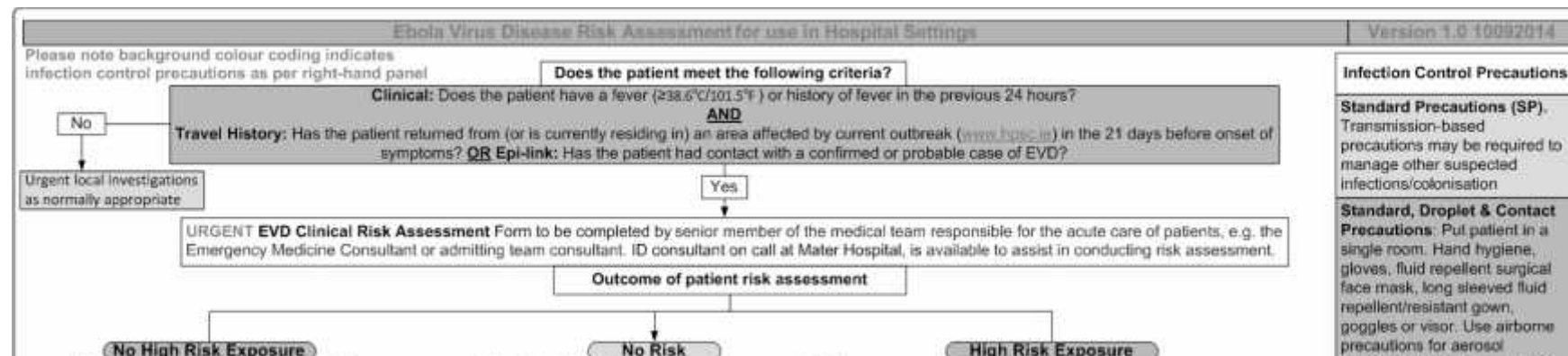
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Please note background colour coding indicates infection control precautions as per right-hand panel



Laboratory testing: please see Interim Laboratory Biosafety Guidance for Processing Samples from Individuals considered At Risk or at High Risk of Ebola Virus Disease, Aug. 2014 <http://www.hpsc.ie/A-Z/Vectorborne/ViralHaemorrhagicFever/Assessingapossiblecase/>

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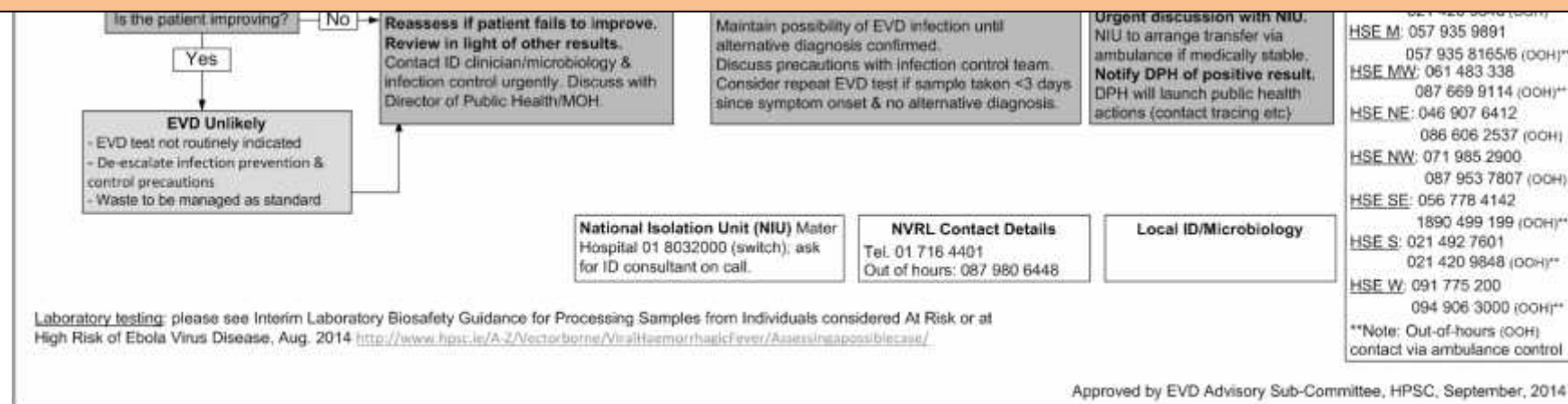


Clinical: Does the patient have a fever ($\geq 38.6^{\circ}\text{C}/101.5^{\circ}\text{F}$) or history of fever in the previous 24 hours?

AND

Travel History: Has the patient returned from (or is currently residing in) an area affected by current outbreak (www.hpsc.ie) in the 21 days before onset of symptoms?

OR Epi-link: Has the patient had contact with a confirmed or probable case of EVD?



Risk assessment

- Senior member of clinical team
- Risk assessment to determine:

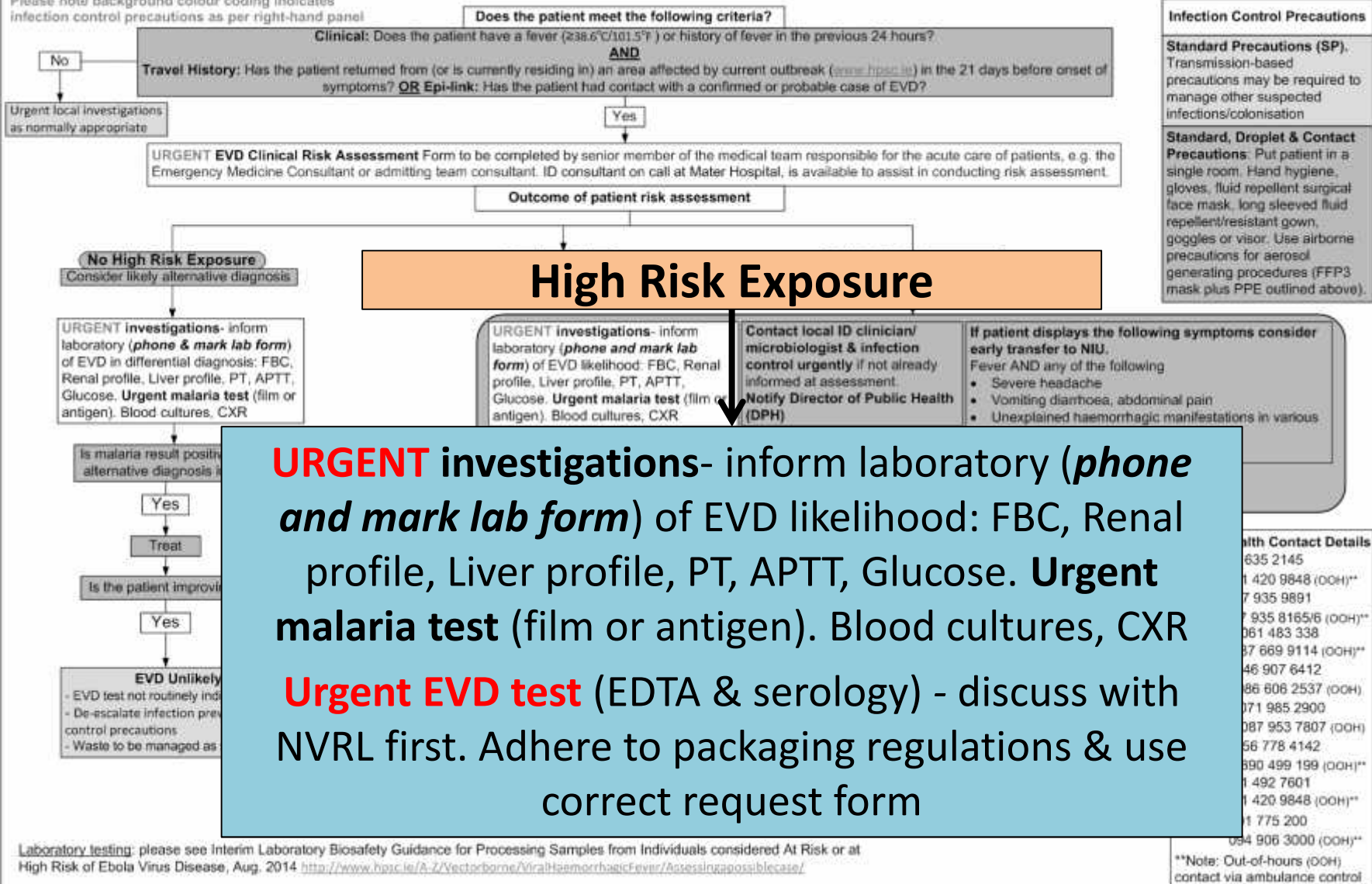
➤ **HAVE THERE BEEN HIGH RISK EXPOSURES OR
NOT**

- Can consult with ID consultant on call at NIU
(contact details on algorithm)

High risk exposures IF the person

1. Had **close face to face contact** (e.g. within 1 metre) without appropriate personal protective equipment (including eye protection) **with a** probable or confirmed **case** who was coughing/ vomiting/ bleeding/ had diarrhoea?
2. Had **direct contact** (without appropriate personal protective equipment) with any **material** soiled by body fluids from a probable/confirmed case of EVD
3. Been identified as a **contact of a** probable or confirmed **case**?
4. Had **unprotected sexual contact** with a case up to three months after recovery?
5. Had a **percutaneous injury** (e.g. with a needle) **or mucosal exposure** to bodily fluids, tissues or laboratory specimens of a probable or confirmed case?
6. Participated in funeral rites with **direct exposure to any human remains** (not just those of a probable/confirmed case) in/from an affected area without appropriate personal protective equipment?
7. Had **direct contact** with fruit **bats / rodents / primates**, living or dead, in/from affected areas, or bushmeat?

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URGENT investigations- inform laboratory (*phone and mark lab form*) of EVD likelihood: FBC, Renal profile, Liver profile, PT, APTT, Glucose. **Urgent malaria test** (film or antigen). Blood cultures, CXR

Urgent EVD test (EDTA & serology) - discuss with NVRL first. Adhere to packaging regulations & use correct request form

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Ebola Virus Disease Risk Assessment for use in Hospital Settings

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Does the patient meet the following criteria?

Clinical: Does the patient have a fever ($\geq 38.6^{\circ}\text{C}/101.5^{\circ}\text{F}$) or history of fever in the previous 24 hours?

AND

Travel History: Has the patient returned from (or is currently residing in) an area affected by current outbreak (www.hpsc.ie) in the 21 days before onset of symptoms? **OR Epi-link:** Has the patient had contact with a confirmed or probable case of EVD?

No

Urgent local investigations as normally appropriate

Yes

URGENT EVD Clinical Risk Assessment Form to be completed by senior member of the medical team responsible for the acute care of patients, e.g. the Emergency Medicine Consultant or admitting team consultant. ID consultant on call at Mater Hospital, is available to assist in conducting risk assessment.

Outcome of patient risk assessment

No High Risk Exposure

Consider likely alternative diagnosis

URGENT investigations- inform laboratory (**phone & mark lab form**) of EVD in differential diagnosis: FBC, Renal profile, Liver profile, PT, APTT, Glucose. **Urgent malaria test** (film or antigen). Blood cultures, CXR

Is malaria result positive alternative diagnosis

Yes

Treat

Is the patient improving

Yes

EVD Unlikely

- EVD test not routinely indicated
- De-escalate infection prevention & control precautions
- Waste to be managed as standard

High Risk Exposure

URGENT investigations- inform laboratory (**phone and mark lab form**) of EVD likelihood: FBC, Renal profile, Liver profile, PT, APTT, Glucose. **Urgent malaria test** (film or antigen). Blood cultures, CXR

Contact local ID clinician/ microbiologist & infection control urgently if not already informed at assessment. **Notify Director of Public Health (DPH)**

If patient displays the following symptoms consider early transfer to NIU.
Fever AND any of the following
• Severe headache
• Vomiting/diarrhoea, abdominal pain
• Unexplained haemorrhagic manifestations in various

**Contact local ID clinician/microbiologist & infection control urgently if not already informed at assessment.
Notify Director of Public Health (DPH)**

Infection Control Precautions

Standard Precautions (SP).

Transmission-based precautions may be required to manage other suspected infections/colonisation

Standard, Droplet & Contact Precautions:

Put patient in a single room. Hand hygiene, gloves, fluid repellent surgical face mask, long sleeved fluid repellent/resistant gown, goggles or visor. Use airborne precautions for aerosol generating procedures (FFP3 mask plus PPE outlined above).

Public Health Contact Details

E: 01 635 2145

021 420 9848 (OOH)**

M: 057 935 9891

057 935 8165/6 (OOH)**

MW: 061 483 338

087 669 9114 (OOH)**

NE: 046 907 6412

086 606 2537 (OOH)

HSE NW: 071 985 2900

087 953 7807 (OOH)

HSE SE: 056 778 4142

1890 499 199 (OOH)**

HSE S: 021 492 7601

021 420 9848 (OOH)**

HSE W: 091 775 200

094 906 3000 (OOH)**

**Note: Out-of-hours (OOH)

contact via ambulance control

National Isolation Unit (NIU) Mater Hospital 01 8032000 (switch); ask for ID consultant on call.

NVRL Contact Details
Tel: 01 716 4401
Out of hours: 087 980 6448

Local ID/Microbiology

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Ebola Virus Disease Risk Assessment for use in Hospital Settings		Version 1.0 10092014
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<p>No</p> <p>Urgent local investigations as normally appropriate</p>	<p>Yes</p> <p>URGENT EVD Clinical Risk Assessment Form to be completed by senior member of the medical team responsible for the acute care of patients, e.g. the Emergency Medicine Consultant or admitting team consultant. ID consultant on call at Mater Hospital, is available to assist in conducting risk assessment.</p>	<p>Infection Control Precautions</p> <p>Standard Precautions (SP). Transmission-based precautions may be required to manage other suspected infections/colonisation</p> <p>Standard, Droplet & Contact Precautions: Put patient in a single room. Hand hygiene, gloves, fluid repellent surgical face mask, long sleeved fluid repellent/resistant gown, goggles or visor. Use airborne precautions for aerosol generating procedures (FFP3 mask plus PPE outlined above).</p>
<p>Outcome of patient risk assessment</p>		
<p>No High Risk Exposure</p> <p>Consider likely alternative diagnosis</p> <p>URGENT investigations- inform laboratory (phone & mark lab form) of EVD in differential diagnosis: FBC, Renal profile, Liver profile, PT, APTT, Glucose. Urgent malaria test (film or antigen). Blood cultures, CXR</p>	<p>High Risk Exposure</p> <p>URGENT investigations- inform laboratory (phone and mark lab form) of EVD likelihood: FBC, Renal profile, Liver profile, PT, APTT, Glucose. Urgent malaria test (film or antigen). Blood cultures, CXR</p> <p>contact local ID clinician/ microbiologist & infection control urgently if not already informed at assessment. Notify Director of Public Health (PH)</p> <p>If patient displays the following symptoms consider early transfer to NIU.</p> <p>Fever AND any of the following</p> <ul style="list-style-type: none"> • Severe headache • Vomiting diarrhoea, abdominal pain • Unexplained haemorrhagic manifestations in various 	
<p>If patient displays the following symptoms consider early transfer to NIU.</p> <ul style="list-style-type: none"> • Fever AND any of the following • Severe headache • Vomiting diarrhoea, abdominal pain • Unexplained haemorrhagic manifestations in various forms • Multi-organ failure 		
<p>Hospital 01 8032000 (switch); ask for ID consultant on call.</p> <p>Tel. 01 716 4401</p> <p>Out of hours: 087 980 6448</p>		
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IF NO to high risk exposures,
EVD UNLIKELY

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Yes

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Outcome of patient risk assessment

No High Risk Exposure

Consider likely alternative diagnosis

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Is malaria result positive or alternative diagnosis identified?

Yes

Treat

Is the patient improving?

Yes

EVD Unlikely

- EVD test not routinely indicated
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- Waste to be managed as standard

No High Risk Exposure

Consider likely alternative diagnosis

profile, Liver profile, PT, APTT, Glucose. **Urgent malaria test** (film or antigen). Blood cultures, CXR

informed at assessment. **Notify Director of Public Health (DPH)**

URGENT investigations- inform laboratory (*phone & mark lab form*) of EVD in differential diagnosis: FBC, Renal profile, Liver profile, PT, APTT, Glucose. **Urgent malaria test** (film or antigen). Blood cultures, CXR

Infection Control Precautions

Standard Precautions (SP). Transmission-based precautions may be required to manage other suspected infections/colonisation

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the following symptoms consider

- Severe headache
- Vomiting/diarrhoea, abdominal pain
- Unexplained haemorrhagic manifestations in various forms

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No

Urgent local investigations as normally appropriate

Yes

URGENT EVD Clinical
Emergency Medicine Consult

No High Risk Exposure
Consider likely alternative diagnosis

patients, e.g. the risk assessment.

No High Risk Exposure
Consider likely alternative diagnosis

No Risk

Urgent local investigations as normally appropriate

High Risk Exposure

Is malaria result positive or other alternative diagnosis identified?

URGENT investigate laboratory (phone) of EVD in differential Renal profile, Liver Glucose; Urgent malaria antigen). Blood culture

Is malaria result positive or other alternative diagnosis identified?

No

Yes

Treat

Is the patient improving?

No

Yes

EVD Unlikely

- EVD test not routinely indicated
- De-escalate infection prevention & control precautions
- Waste to be managed as standard

Reassess if patient fails to improve. Review in light of other results. Contact ID clinician/microbiology & infection control urgently. Discuss with Director of Public Health/MOH.

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Local ID/Microbiology

Urgent EVD test (EDTA & serology) - discuss with NVRL first. Adhere to packaging regulations & use correct request form

Treat

Is the EVD test positive?

No

Yes

Maintain possibility of EVD infection until alternative diagnosis confirmed. Discuss precautions with infection control team. Consider repeat EVD test if sample taken <3 days since symptom onset & no alternative diagnosis.

Urgent discussion with NIU. NIU to arrange transfer via ambulance if medically stable. **Notify DPH of positive result.** DPH will launch public health actions (contact tracing etc)

Infection Control Precautions

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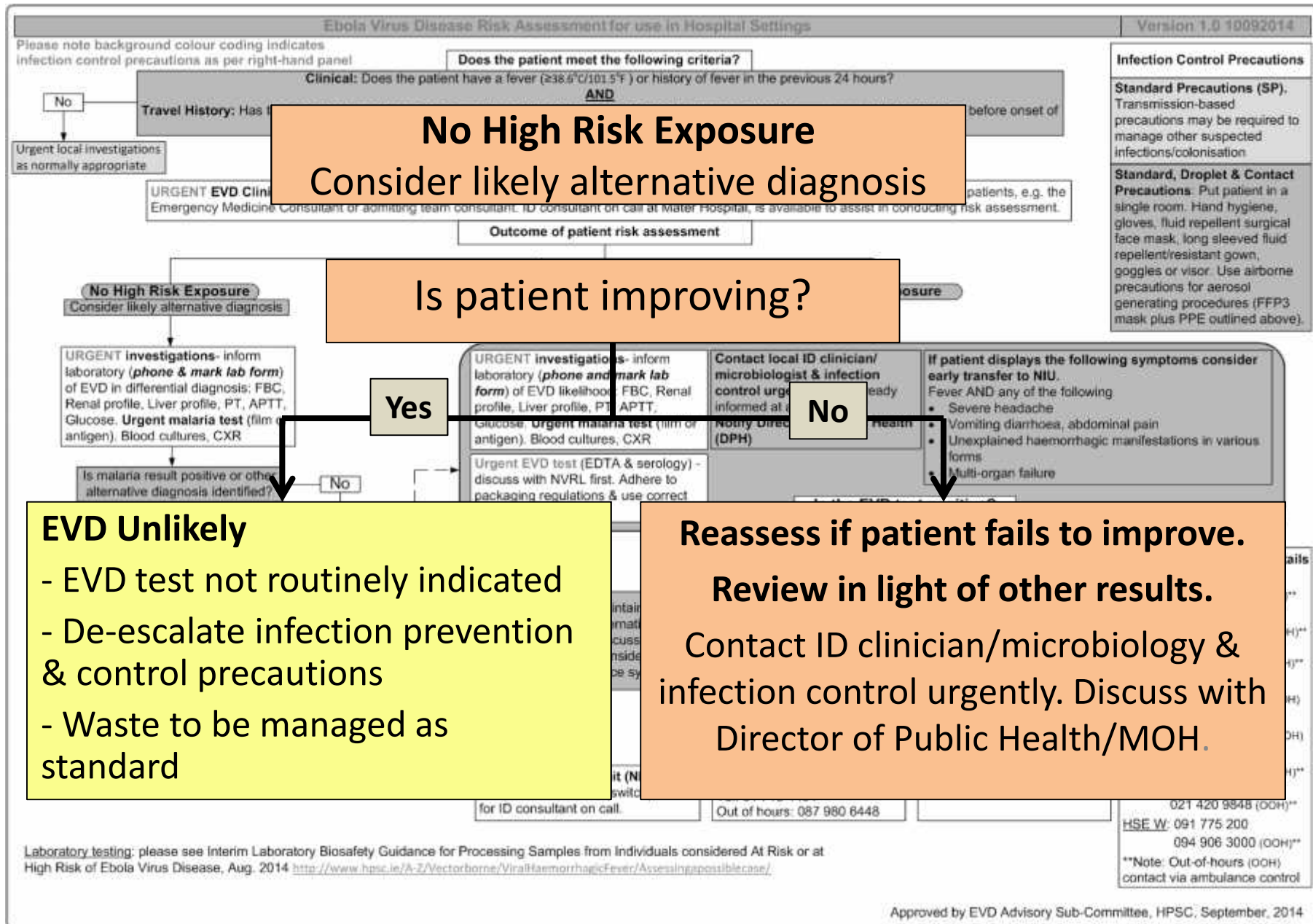
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Adult clinical care pathway

- Likely routes of presentation to hospital
- Step by step description of risk assessment, investigation, testing, infection control precautions and notification to the Director of Public Health
- Expertise of NIU clinicians available during assessment
- **Cases will be transferred to NIU**
- **Acute hospital likely to manage case for short period of time pending transfer**
- NIU arranges transfer with the National Ambulance Service
- Stable patients – NAS paramedic team
- Patients requiring critical care management – transfer in conjunction with Mater Critical Care Team and NIU
- All patients who are transferred to the Mater will be admitted directly to the NIU