UK-Med

UKaid

from the British people

A brief history of UKMED

- Originally the South Manchester Accident Rescue Team
- Responded to Armenian and Iran earthquakes and Lockerbie air disaster 1988
- Established as a charity in 1995
- Since then they have responded to Haiti 2010, typhoon Haiyan 2013, Gaza 2014, Nepal 2015, Sierra Leone 2014-15 and Bangladesh 2018

Set up

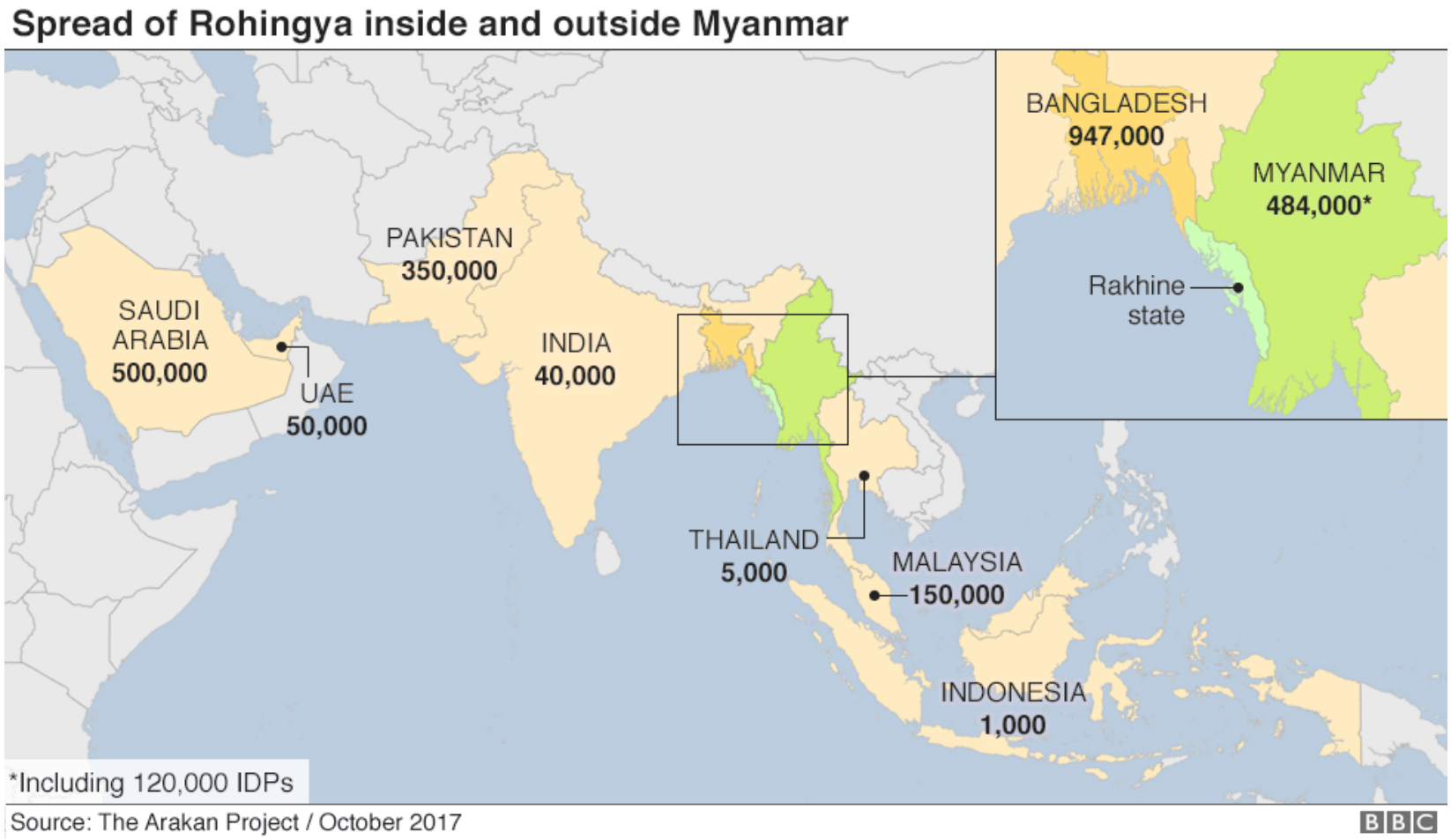
- WHO certified response team
- Funded by DFID foreign aid budget
- Training – pre-deployment course – 2 days, deployment course – 5 days
- On call system with primary task to respond to Sudden Onset Disasters
- Affected country requests teams from WHO
- WHO then requests response from certified teams globally according to location and type of disaster
- UK team is a certified type 2 hospital

UKEMT

UK EMT deployment

- Requested by WHO
- Diphtheria cases overwhelming general health centres
- Specialist infectious disease cell in two waves
- First wave left just after Christmas 2017
- Invited to join second wave to leave 13th January 2018
- Supported by NHS Lothian and the ED departments
- Lots of vaccines!
- UKEMT deployed to run 3 Diphtheria treatment centres
- Team – clinical and logistical staff and an epidemiologist
- Partnership with IOM (local staff, contact tracing)

Rohingya people



Background

- Rohingyan are a Muslim community living in Rakhine state of Myanmar
- Friction between the Rohingya and the Myanmar buddhists has been ongoing for many decades
- The Rohingya are not recognised as citizens in Myanmar therefore they have no rights, education or healthcare
- In summer 2017 the Myanmar military trained and armed the Myanmar buddhists and allowed them to join the local police
- In August 2017 the 'Arakan Rohingyan Salvation Army' is reported to have attacked 30 border posts, killing 9 soldiers
- The Myanmar government responded with 'clearance operations'
- Within the last 20 years a number of Rohingyan have crossed the border into Bangladesh already.
- Population in July 2017 34,000. Population in December 2017 547,000

Disasters Emergency Committee

Finding safe haven in Bangladesh

Hundreds of thousands of Rohingya have left their ethnic homeland of Rakhine State for the district of Cox's Bazar in Chittagong, Bangladesh.

BY NC SA

EE
12:06
100%
Haldia Palong
Ratna Palong
Jaliapalong
Kutupalong
Balukhali
Thangkhaili
SubhanKhali
MadarBonia
Palangkhali
Chapotkhali
Monkhali
Whykhong
Shamlapur
Baharchara
ShilKhali
MiaPara
JahajPura
Nhilla
Alikhali
Teknaf
Sabrang
10 km

Diphtheria Treatment Centres: Referral Pathway

World Health Organization

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MAP DATE: 09 January 2018

As of 15 Jan 2018

IOM2AA
Current BC: 10/20
Surge BC: 10/30
IOM

IOM1D4
Current BC: 10/30
Surge BC: 10/30
IOM

MSFRUB
Current BC: 24/125
Surge BC: 60/200
MSF-B

MSFBKL
Current BC: 70/0
Surge BC: 70/0
MSF-H

SPP1TT
Current BC: 10/30
Surge BC: 10/50
Samaritans Purse

MSFJAM
Current BC: 20/40
Surge BC: 20/60
MSF-S

IOM3LD
Current BC: 10/30
Surge BC: 10/30
IOM

Zone AA, Zone CC, Zone OO, Zone DD, Zone PP, Zone EE, Zone UU, Zone VV, Zone QQ, Zone RR, Zone WW, Zone ZZ, Zone SS, Zone XX, Zone ZA, Zone TT, Zone YY, Zone NN, Zone MM, Zone LL, Zone KK, Zone HH, Zone FF, Zone GG, Zone II, Kutupalong RC, Kutupalong MS, Balukhali MS, Thangkhali Burmapara / Tasnimarkhola, Hakimpara, Jamtoli, Moghona/Pathania, Leda D, Leda C, Leda MS, Leda A, Leda B, Nayapara EXP, Nayapara RC, Jadimura

IOM, OBAT, MTI, SCI, MSF, CRC, JRC, Iran RC, MSF/IOM

Bangladesh, Cox's Bazar, Map extent, Myanmar

Site	GPS coordinates	Zone	Contact
IOM1D4	Lat. 21.1505 Long. 92.1524	Kutupalong D4	01717586652
IOM3LD	Lat. 20.971135 Long. 92.2092	Leda	01712346579
SPP1TT	Lat. 21.1767008 Long. 92.155810	TT	01860580519
MSFRUB	Lat 21.20727 Long 92.170351	Rubber Garden	01632845428
MSFJAM	Lat 21.1505 Long. 92.1524	Moynarghona/ Jamtoli	01793437600
IOM2AA	Lat. 21.211597 Long. 92.147668	AA	01715598316

Zone based referral centre
- MSFJAM
- IOM3LD
- IOM1D4 or MSFRUB
- IOM2AA or IOM1D4
- SPP1TT

Primary referral facilities
BC = Bed capacity
Bed type: red / orange
Camp/settlement/ zone boundary
Upazila boundary
Country boundary
Major road

Data source: Inter-Sector Coordination Group (ISCG), World Health Organization (WHO)
World Health Organization (WHO)
Map production: WHO Health Emergencies Programme

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps

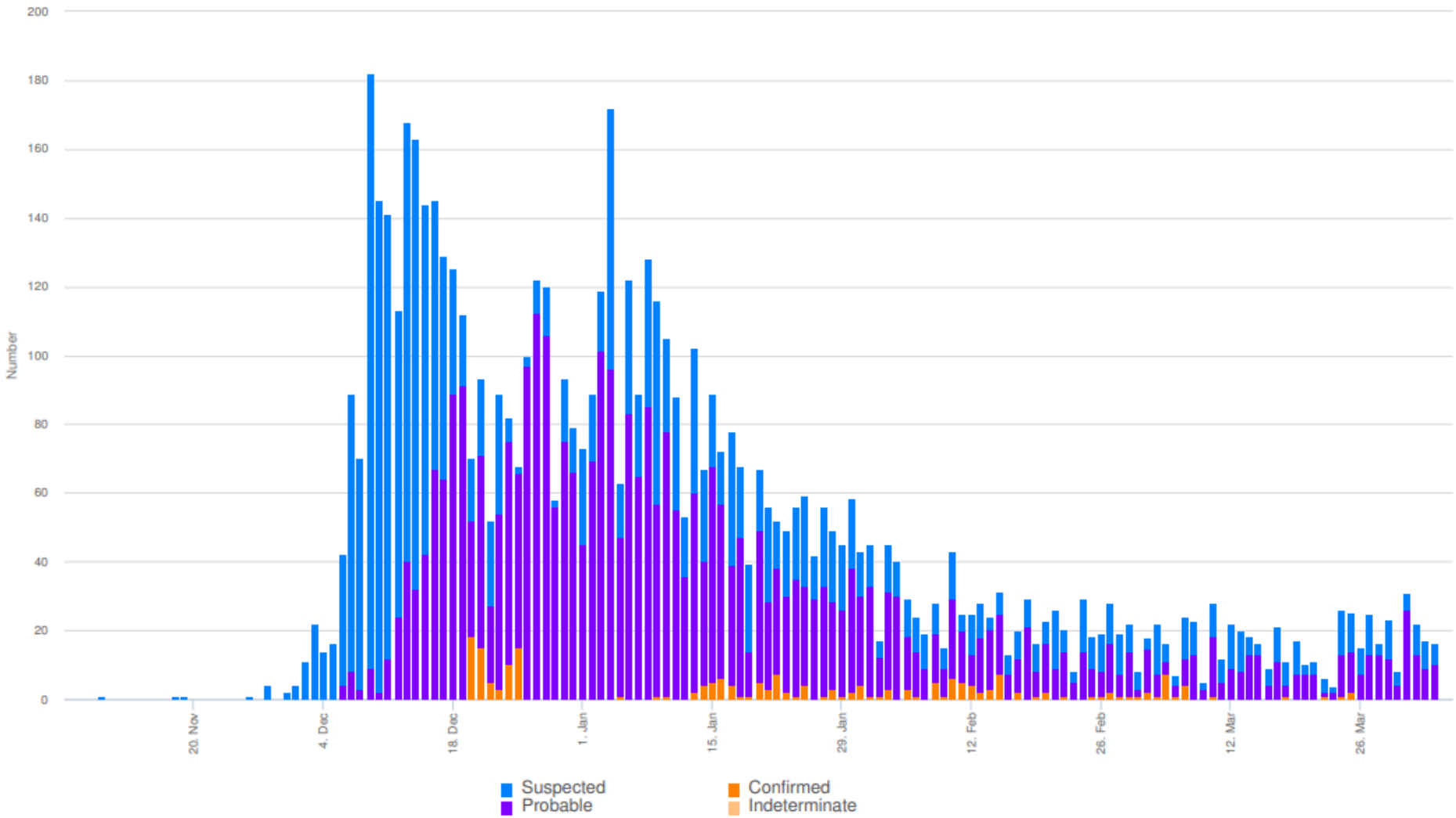
Disputed areas
Disputed borders

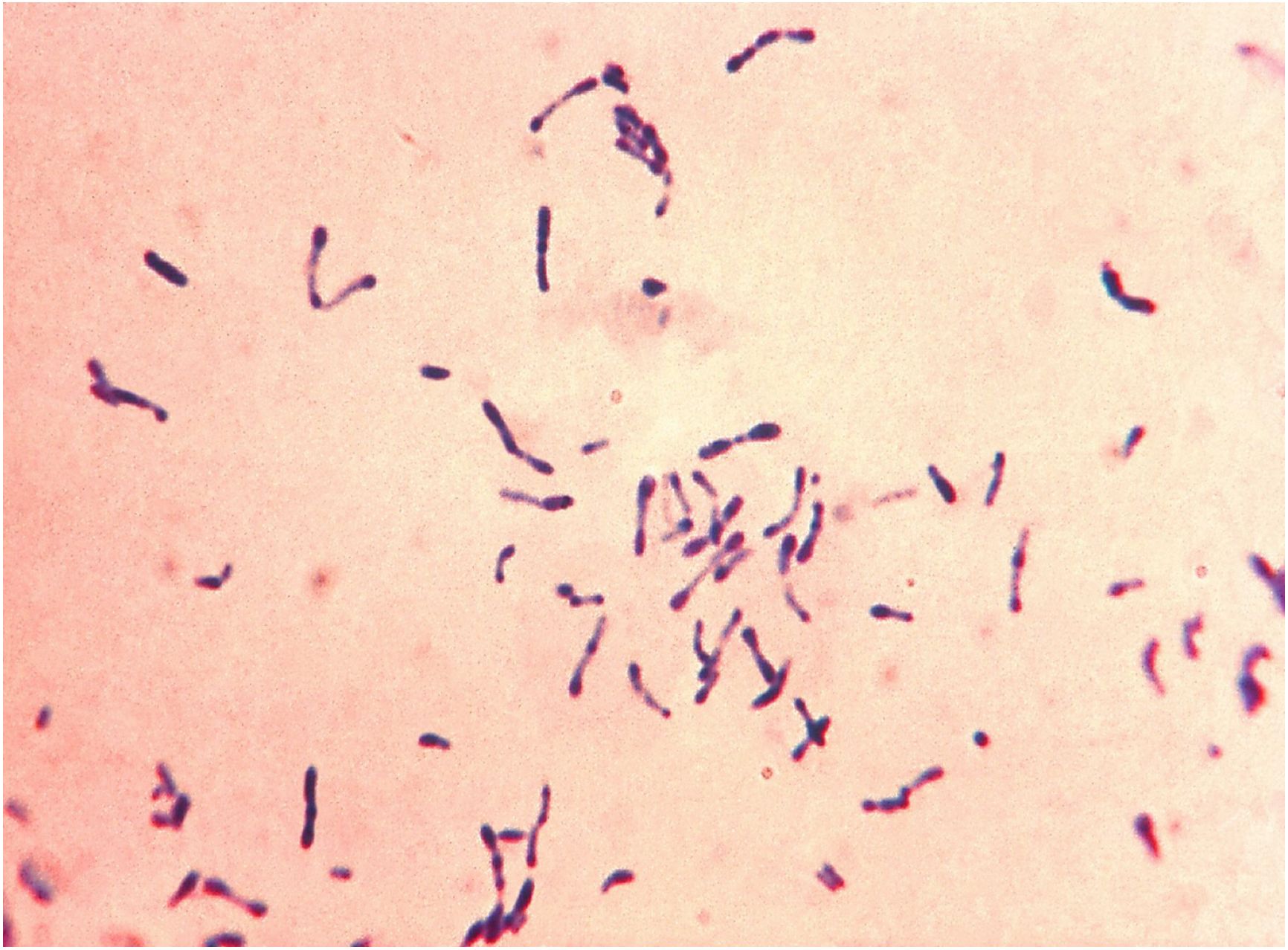
DIPHTHERIA TREATMENT CENTER
ডিফথেরিয়া চিকিৎসা কেন্দ্র
ဆုံဆုံနှာ ကုသရေး ဌာန
Leda, Hnila, Teknaf, Cox's Bazar
International Organization for Migration (IOM)
The UN Migration Agency

DIPHTHERIA
is deadly-
IMMUNISATION
is the
safeguard
ASK AT YOUR
LOCAL COUNCIL
OFFICES
OR
WELFARE CENTRE

Diphtheria outbreak - update

Figure 1 Epidemic curve of diphtheria cases in Cox's Bazar, by date of admission (W44 2017 - W14 2018)





Diphtheria

Caused by *Cornyebacterium diptheria,* rod shaped gram negative bacterium

Spread by direct contact or aerosol spread, incubation period 2-5 days

Symptoms – sore throat, fever, lymphadenopathy

Grey throat membrane – pathognomic, can cause breathing difficulties, can affect tonsils, pharynx, larynx, nares, trachea

Lymphadenopathy with ‘bull neck’

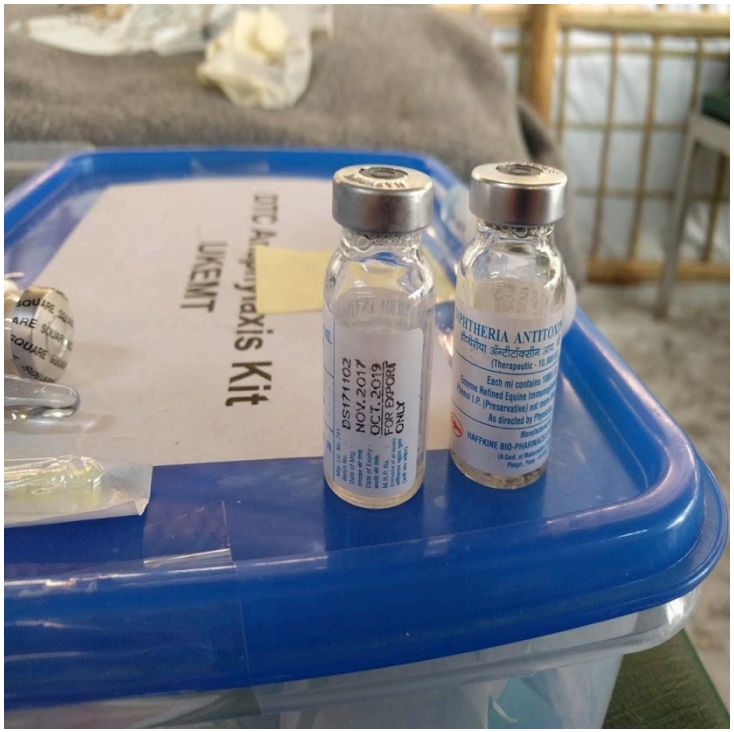
Differential diagnosis – tonsillitis, mumps

Long standing sequelae – myocarditis leading to heart failure and arrhythmias, neuropathy, motor paralysis

Fatal in 5-10% of cases if untreated

Treatment – Azithromycin od x 3 days to suspected cases and prophylaxis for family contacts

Diphtheria Antitoxin (DAT)



Toxin secreting: Toxin effects occur 2-12 weeks after primary infection

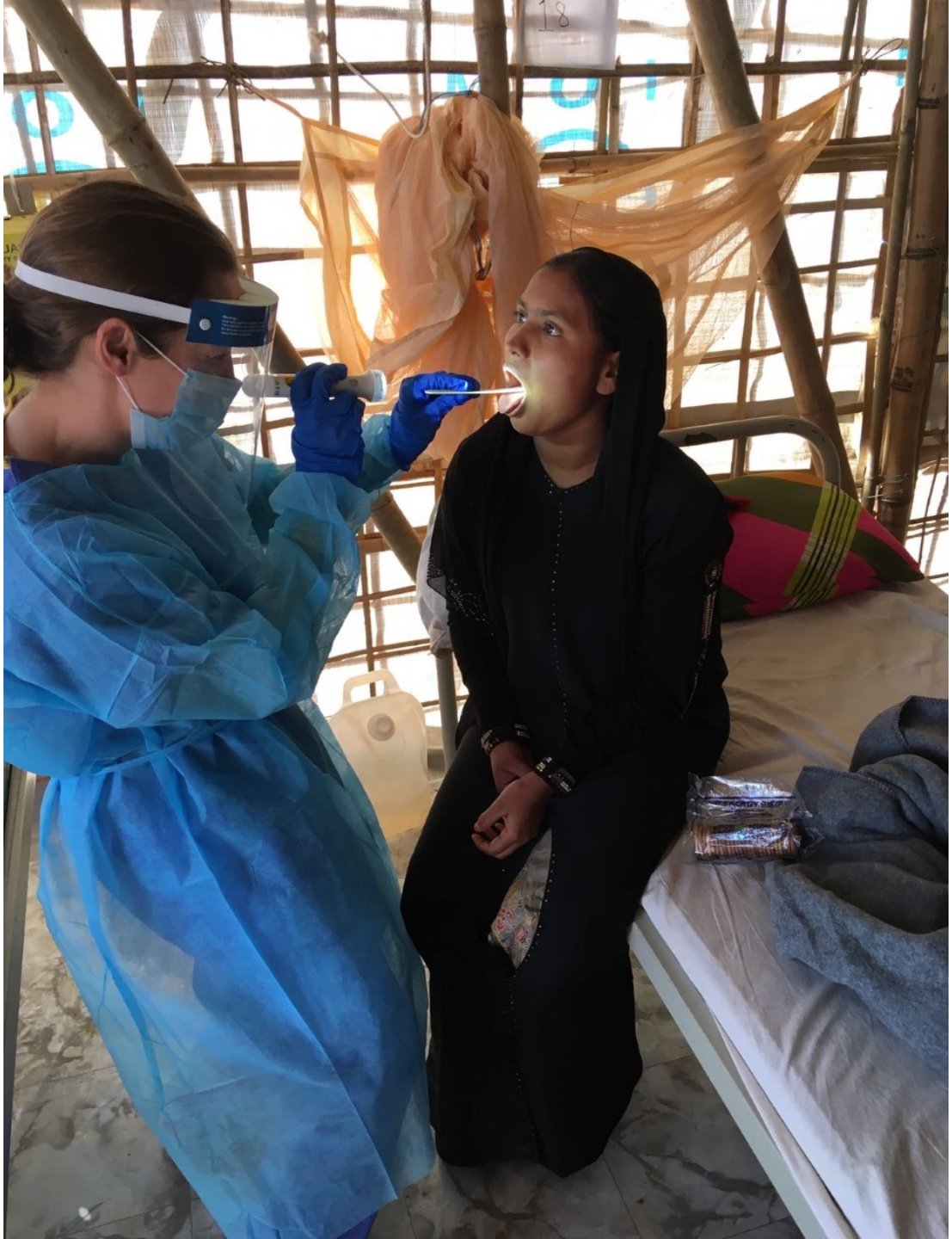
- Include myocarditis and paralysis
- Irreversible binding of toxin to effector sites

DAT given to bind toxin in circulation

- Equine serum derived
- Risk of acute anaphylactoid reactions or delayed “serum sickness”- type reaction
- Tester doses given SC
- Dose given based on disease severity
- Very slow ‘drip’ process

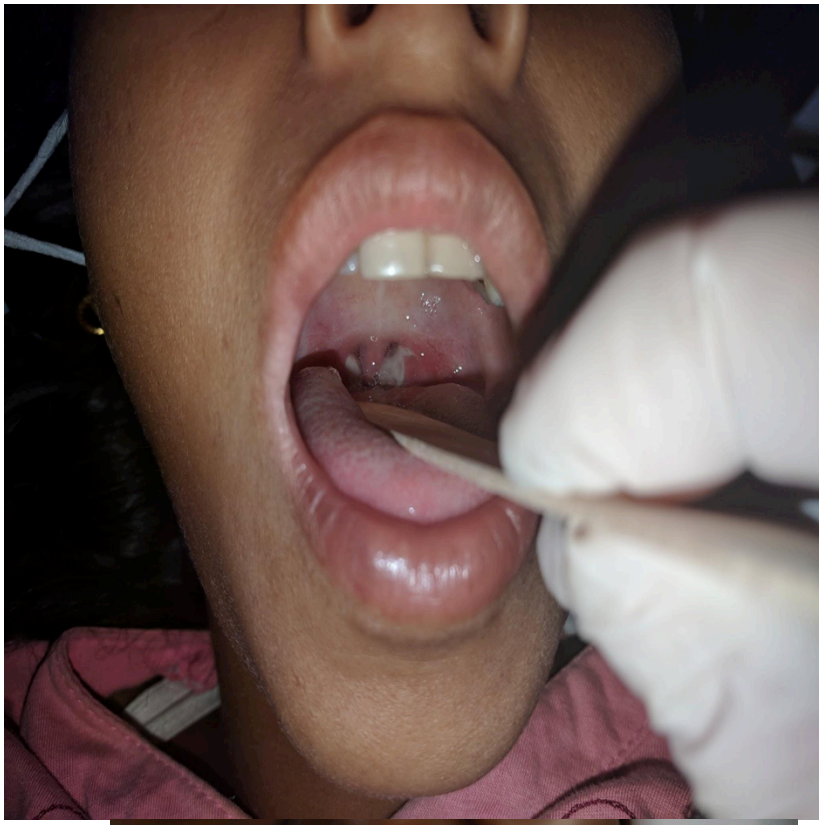
Prior to outbreak there were approx 2000 doses Internationally (5 in UK)

IOM
OIM



COMFIT

Diagnostic difficulties



Appendix A: clinical pathway

World Health Organization

TRIAGE

Some patients may present weeks after URTI symptoms with new onset of cardiac renal or neurological

Sore Throat
URTI
+/- Fever
+/- Malaise

Refer to Infection Prevention and Control measures

Protected clinician examines throat

Early pseudo-membrane

pseudo-membrane OR gross lymphadenopathy

No → URTI
Advice to return if no improvement.
Give Paracetamol

Yes

Contact Tracing, Vaccination, and Prophylaxis for Contacts

Are there Clinical Warning Signs?

Pseudo-Membrane

Stridor
Fast Respiratory Rate
Chest in-drawing
Restlessness or lethargy
Bull neck
Delayed capillary refill
Fast Heart rate and cold extremities
Central Cyanosis

Bull Neck

Yes

DAT (give as soon as possible)
Antibiotics (give as soon as

Field Hospital

DAT dose
20-100,000 IU

Aqueous benzyl penicillin (penicillin G): (IM or IV)
25 000 units/kg every 6 hours. ***Daily maximum dose is 4 MIU.*** Treat for 14 days.

When patients are able to swallow, switch to oral antibiotics and continue for combined total of 14 days

Laboratory sampling on a case by case basis

No

Antibiotics (give as soon as possible)

Isolation facility for at least 48 hours

Oral penicillin V
10-15 mg/kg/dose administered every 6 hours. Maximum is 500 mg per dose. Treat for 14 days.

Oral erythromycin
10 mg/kg administered every 6 hours. Maximum is 500 mg per dose. Treat for 14 days.

Oral azithromycin
10 mg/kg administered once daily. Maximum is 500 mg per day. Treat for 14 days..

Monitor for deterioration, refer to field hospital if patient worsens

Patient Name_____ID: ☐☐☐☐☐☐ ☐☐☐☐

DIPTHERIA ANTI-TOXIN (DAT) CHECKLIST

- ☐ Get approval for DAT administration from UKEMT doctor
- ☐ Informed verbal or written consent (include explanation of potential side effects/ anaphylaxis)
- ☐ Check for a patent IV line
- ☐ Full O2 cylinder/oxygen concentrator at bedside with appropriate sized facemask.
- ☐ Anaphylaxis kit & Ambu-bag present
- ☐ Check patient weight_____Kg Calculate all doses of emergency drugs in mls and write below
- ☐ Check first dose of antibiotics given

Adrenaline 1:1000	mls	Hydrocortisone:
Fluid bolus:	mls	Anti-histamine:

☐ Baseline vital signs charted (see page 2).

DAT skin test

Draw up the 2 DAT test doses and 2 control doses of saline

Administer each sc injection in the upper arm; DAT on one side, saline on the other.

Once administered observed closely and record vital signs at 5 minute intervals (see page2)

Test Dose	Time	Signature	Reaction Yes/No (describe)
0.1 ml undiluted DAT sc + 0.1ml control saline sc			Y / N / equivocal
0.25 ml undiluted DAT SC + 0.25ml control saline			Y /N

If a there is a positive reaction to the sensitivity test commence the desensitisation pathway before DAT administration

DAT administration: give antihistamine and steroid pre-med

Chlorphenamine_____mg Hydrocortisone_____mg Signed:_____ Time:_____

Dose (as per DAT decision tree): circle dose below	Calculate infusion/drip rate and time periods. Start slowly and increase.
20,000 40,000 80,000	

☐ Count antitoxin vials, maintain cold chain until approval to begin infusion

DAT INFUSION START TIME:

If any reaction slow down or consider stopping infusion. Call for help.

DAT INFUSION COMPLETION TIME:

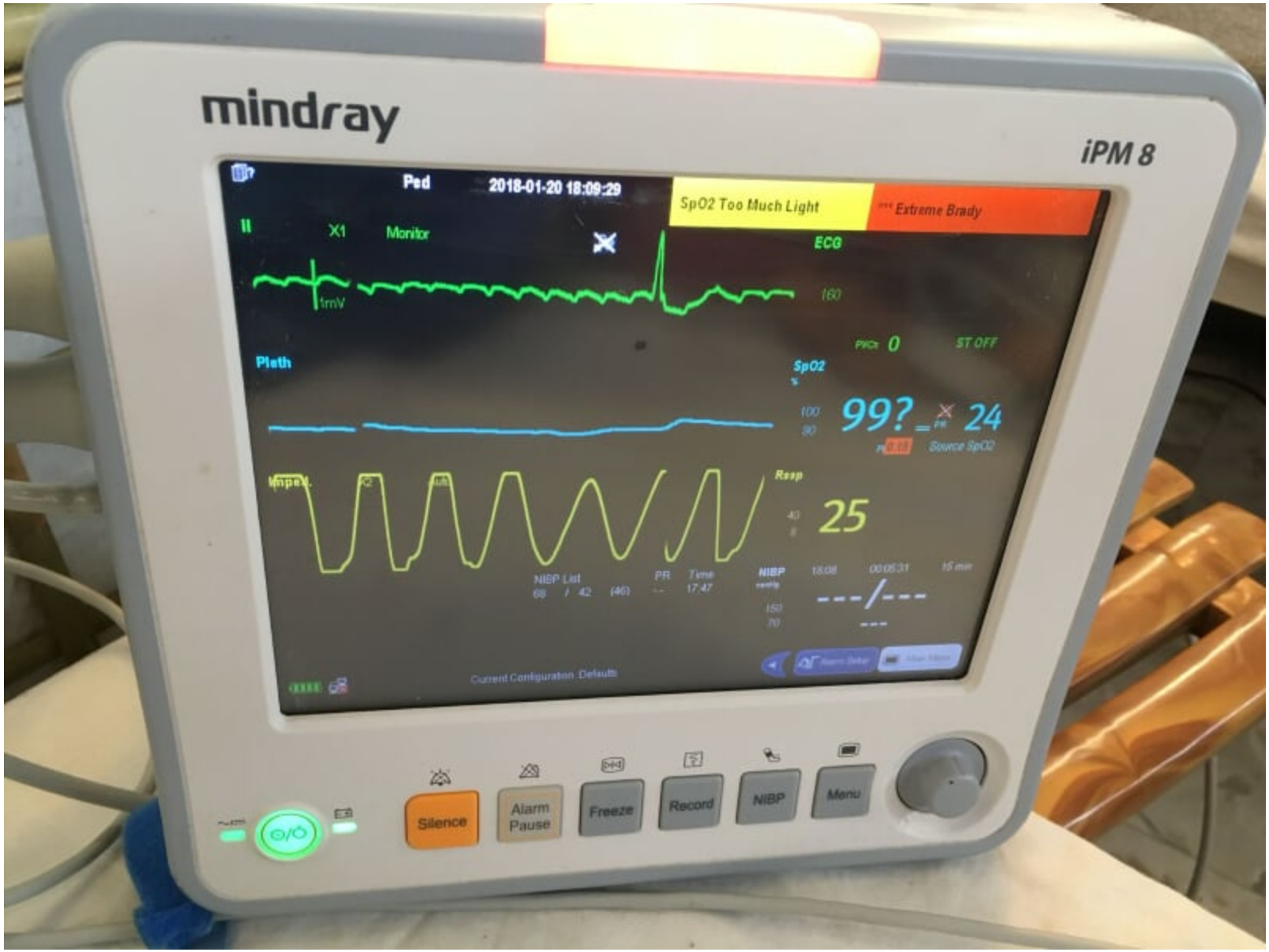
REACTION Y/N Time of Reaction:

If yes alert UKEMT staff immediately

3rd January 2018. Adapted from WHO and MSF document

WHO operational protocols

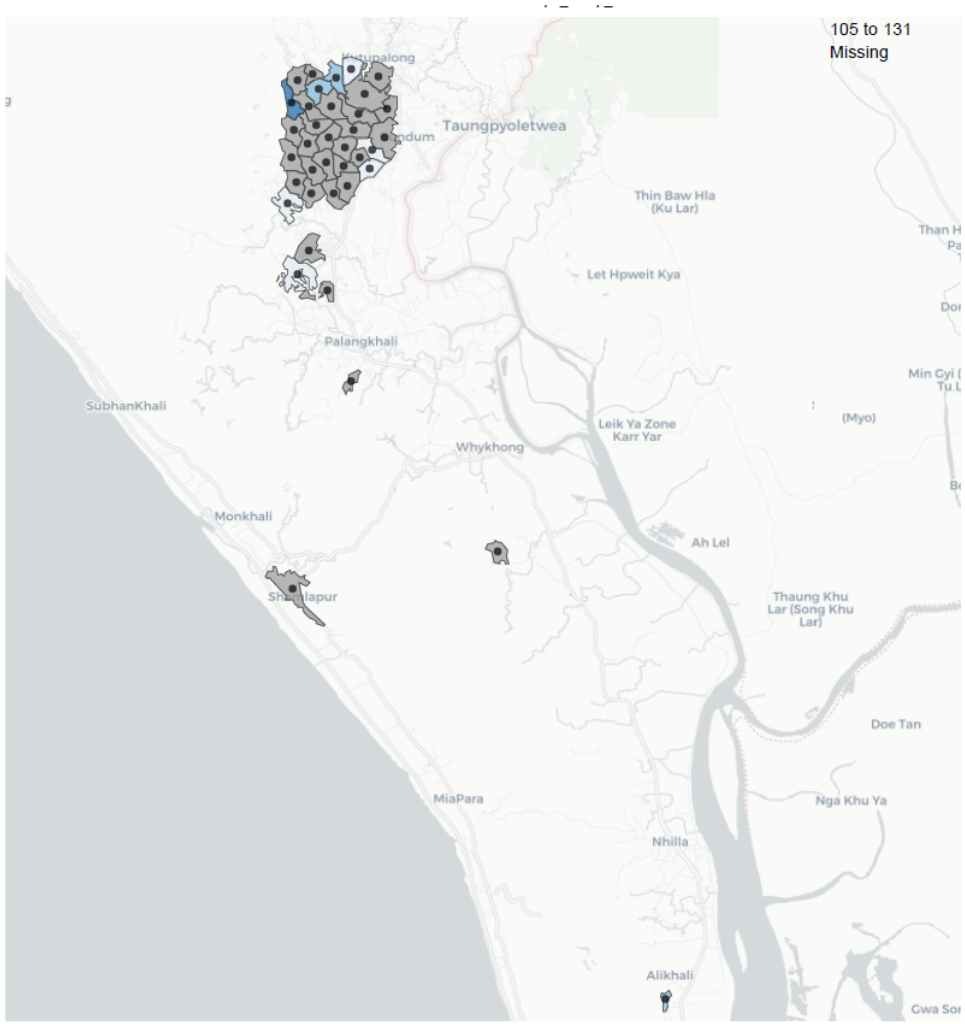
Severity of Diphtheria	Dosage for children and adults
• Laryngeal or pharyngeal of 2 days duration, single area v more than one area	• 20,000-40,000 IU
• Nasopharyngeal disease	• 40,000-60,000 IU
• Extensive disease of 3 or more days of duration or any patient with diffuse neck swelling, respiratory distress or haemodynamic instability	• 80,000-100,000 IU

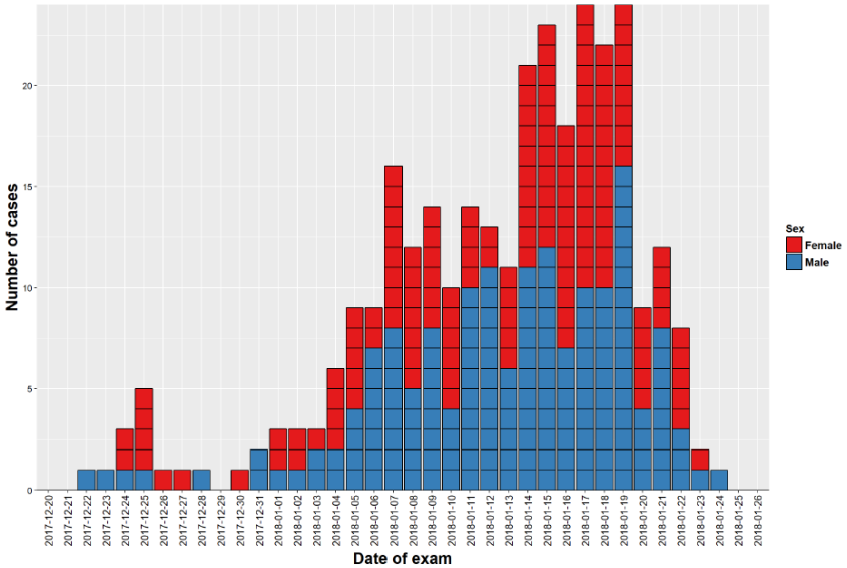

mindray
iPM 8
Ped
2018-01-20 18:09:29
SpO2 Too Much Light
*** Extreme Brady
II
X1
Monitor
ECG
1mV
160
PVCs 0
ST OFF
Pleth
SpO2
%
100
90
99?
24
Source SpO2
Resp
40
25
NIBP List
68 / 42 (46)
PR
Time
17:47
NIBP
---/---

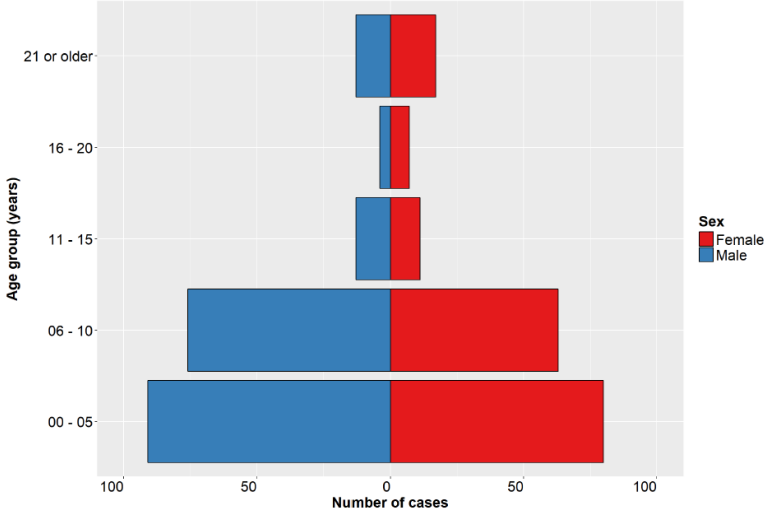
Current Configuration: Defaults
Silence
Alarm Pause
Freeze
Record
NIBP
Menu

FACE MASK
FACE MASK
Smile

Alert investigation - mumps







Diphtheria outbreak - update

Indicator		Cumulative[1]	Last 7 days	Last 24 hours
Epidemiology				
1.	Total number of cases[2]	6,515	158	16
	Confirmed	3.1% (*n*= 201)	0.0% (*n*= 0)	0.0% (*n*= 0)
	Probable	53.0% (*n*= 3,454)	63.3% (*n*= 100)	62.5% (*n*= 10)
	Suspected	43.9% (*n*= 2,860)	36.7% (*n*= 58)	37.5% (*n*= 6)
	Indeterminate	0.0% (*n*= 0)	0.0% (*n*= 0)	0.0% (*n*= 0)
2.	Laboratory testing			
	Positive	30.1% (*n*= 201)	0.0% (*n*= 0)	0.0% (*n*= 0)
	Indeterminate	0.0% (*n*= 0)	0.0% (*n*= 0)	0.0% (*n*= 0)
	Negative (excluded)	69.9% (*n*= 467)	0.0% (*n*= 0)	0.0% (*n*= 0)
3.	Total number of deaths	40	0	0
4.	Attack rate[3] / 10,000 population	95.76	2.18	
Clinical presentation				
5.	% with pseudomembrane	37.0% (*n*= 2,593)	48.4% (*n*= 77)	37.5% (*n*= 6)
6.	% with complications[4]	1.1% (*n*= 80)	0.0% (*n*= 0)	0.0% (*n*= 0)
Case management				
7.	% patients given antibiotics	59.9% (*n*= 4,203)	99.4% (*n*= 158)	100.0% (*n*= 16)
8.	% patients treated with DAT[5]	16.7% (*n*= 1,169)	41.5% (*n*= 66)	0.0% (*n*= 0)

Notes

[1] 8 November 2017 - present based on date of presentation

[2] Case definition:

Confirmed: case-patients reported as positive for toxigenic *C. diphtheriae* strain by a multiplex assay.

Probable: case-patients with an upper respiratory tract illness with laryngitis or nasopharyngitis or tonsillitis AND sore throath or difficulty swallowing **and** an adherent membrane/pseudomembrane OR gross cervical lymphadenopathy.

Suspected: any case with a clinical suspicion of diphtheria. Includes case-patients that are unclassified due to missing values.

Indeterminate: case-patients reported as indeterminate for toxigenic *C. diphtheriae* strain by a multiplex assay.

Excluded: case-patients reported as negative for toxigenic *C. diphtheriae* strain by a multiplex assay.

[3] Source of population data: IOM. Bangladesh: Needs and Population Monitoring - NPM R7 Report. 15 December 2017

[4] Defined as one or more of the following: respiratory distress, shock, irregular heart rate, peripheral neuritis / neuropathy, kidney failure or cutaneous necrotic lesions.

[5] Diphtheria anti-toxin. Data for number treated with DAT in last 24 hours comes from the Daily Operational Monitoring Report Form.

Difficulties faced

- Diagnostic difficulties in constantly changing outbreak
- Ceilings of care

- Politics - Vaccination programme
- Concerns about Diphtheria getting into the host population
- Potential for security problems

F2
F3

IOM • OIM

IOM
OIM

Inauguration Ceremo
Madhurchara Hospit
Date : 20 November 2018

NEW
YORK