YELLOW FEVER VACCINATION

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Disclaimer

This presentation is for educational purposes only and not for commercial activity.
Yellow Fever Disease

- Yellow fever is an acute viral hemorrhagic disease
- Yellow fever virus is arbovirus of flavivirus genus
- Vectors- Aedes mosquitoes (Africa)
  - Haemagogus mosquitoes (South America)
- Host - Monkeys and Humans
- Yellow Fever does not occur in India
- The conditions for transmission of Yellow Fever are very conducive in India
- Endemic in 46 countries of Africa and Central & South America
- Incubation Period – 3 to 6 days after bite
Vector-Female Aedes Mosquito
START

Mosquitoes breed in tree holes in the forest canopy, or in tree holes on the edge of forested areas, such as banana plantations.

Monkeys become infected when bitten by infected mosquitoes.

Humans become exposed to the virus when bitten by an infected mosquito.

The virus continues transmission as uninfected mosquitoes bite infected monkeys.
Epidemiology of Yellow Fever Disease

- Globally about 20,00,000 cases occur annually
- 90% of Yellow Fever Cases occur in Africa
- Each year 30,000 people die from Yellow Fever
- An attack of Yellow Fever gives lifelong immunity

CLINICAL MANIFESTATIONS — The clinical spectrum of yellow fever includes
- Subclinical infection
- Abortive, nonspecific febrile illness without jaundice
- Life-threatening disease with fever, jaundice, renal failure, and hemorrhage
The classical illness is characterized by three stages:

- **Period of infection** - lasts for three to four days. The patient is febrile and complains of generalized malaise, headache, photophobia, lumbosacral pain, pain in the lower extremities, myalgia, anorexia, nausea, vomiting, restlessness, irritability, and dizziness. Symptoms and signs are relatively nonspecific.

- **Period of remission** - A period of remission lasting up to 48 hours may follow the period of infection, characterized by the abatement of fever and symptoms. Patients with abortive infections recover at this stage. Approximately **15 percent of individuals infected with yellow fever virus enter the third stage of the disease**
- **Period of intoxication**-begins on the third to sixth day after the onset of infection with return of fever, prostration, nausea, vomiting, epigastric pain, jaundice, oliguria, and hemorrhagic diathesis. The viremia terminates at this stage and antibodies appear in the blood. This phase is characterized by variable dysfunction of multiple organs including the liver, kidneys, and cardiovascular system. Multiorgan failure in yellow fever is associated with high levels of proinflammatory cytokines similar to that seen in bacterial sepsis and systemic immune response syndrome.
# Yellow Fever Endemic Countries in Africa

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# Yellow Fever Endemic Countries in Central and South America

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<td>7.</td>
<td>Guyana</td>
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Clinical Presentation of Yellow Fever Disease

- Clinical disease varies from non-specific abortive illness to fatal haemorrhagic fever
- **Symptoms** - Onset is abrupt with fever, chills, malaise, headache, lower back pain, generalised myalgia, nausea & dizziness
- **Physical Examination** - Patient is febrile and acutely ill, congestion of conjunctivae & face, relative bradycardia, febrile convulsions in young children
- Average fever is 39 degree C and lasts 3-4 days
Serious Illness in Yellow Fever Disease

- About 25% patients develop severe form
- Fever, Vomiting, Epigastric pain, Jaundice, Renal failure, Hemorrhagic diathesis,
- Hemorrhagic manifestations-petechiae, ecchymoses, epistaxis, oozing of blood from gums and needle puncture sites
- Haematemesis, malaena, metrorrhagia
- ECG - Myocardial Injury -- ST-T wave anomalies
- About 50% of patients with hepatorenal disease die within 10 days
Red Eyes
Fever
Vomiting
Back Pain
Headache
Bleeding
Jaundice
Muscle Aches
Hepatomegaly
Laboratory abnormalities

• Leukopenia with relative neutropenia
• Raised Serum transaminase (within 48-72 hrs)
• Blood may contain non-infectious immune complexes detectable by immunoassays or PCR
• Thrombocytopenia, prolonged clotting and prothrombin time, reduced fibrinogen and factors II, V, VII, VIII, IX, and X
• Platelet dysfunction
• CSF- raised albumin but no increase in WBC
Diagnosis of Yellow Fever

- **Serology** — Serologic diagnosis is best accomplished using an enzyme-linked immunosorbent assay (ELISA) for IgM. The presence of IgM antibodies in a single sample provides a presumptive diagnosis; confirmation is made by a rise in titer between paired acute and convalescent samples or a fall between early and late convalescent samples.

- **Rapid diagnostic tests** — Rapid diagnostic tests include PCR to detect viral genome in the blood or tissue and ELISA for determination of IgM antibody.

- **Virus isolation** — Virus isolation is accomplished by inoculation of mosquito or mammalian cell cultures, intracerebral inoculation of suckling mice or intrathoracic inoculation of mosquitoes.
Yellow Fever Vaccination

• No cure for Yellow fever, treatment is symptomatic
• Vaccination is most important preventive measure
• Yellow Fever Vaccine is an Attenuated Life Virus preparation of the 17D strain of Yellow fever virus grown in leucosis-free chick embryos.
• A single dose correctly given confers Life long immunity in 100% of recipients
• Protective immunity is achieved after 10 days
• Dose- One dose of 0.5 ml subcutaneously
• Storage temperature- +2 to +8 degree Centigrade
Who should not get Yellow Fever Vaccine

- Anyone with allergy to eggs, chicken protein or gelatin
- Pregnant or could be pregnant now or in the next two weeks
- Children younger than 12 months of age
- Who are HIV positive
- Whose Immune system is weakened as a result of cancer or other medical conditions, a transplant or radiation or drug treatment (such as steroids or cortisone, cancer chemotherapy or other drugs that affect immune cell function)
- Persons who have an acute/moderate illness (with or without a fever) should postpone receiving this vaccine until they are well
- Who have a thymus disorder such as myasthenia gravis, DiGeorge Syndrome or thymoma or Thymus removed
- Who have any major Liver or Kidney Disease
Other Advisory regarding YF Vaccination

• Nursing mothers should avoid or postpone travel to an area where there is risk of Yellow Fever
• Adults 60 years of age and older might be at increased risk for severe problems following vaccination
• # Exemption or contraindication to Yellow Fever Vaccination does not provide any immunity from Quarantine(isolation)
Mild Side Effects of Yellow Fever Vaccination

- Fever, Aches, Soreness, Redness or Swelling where the shot was given - 25%
- Slight sore arm - common
- Feel tired, Headache, Muscle ache, Fever for 24 hours starting 3-9 days after vaccination - 2 to 10%
Serious Side Effects of Yellow Fever Vaccination

- Severe allergic reaction - 1 in 58,000
- Severe nervous system reaction - 1 in 1,25,000
- Immediate Hypersensitivity - Rash, Itching, Faint or Asthma – 1 in 1,30,000
- Life threatening severe illness with organ failure - 1 in 2,50,000
- Inflammation of multiple organs e.g. Lungs, Kidney, Liver, Spleen - 1 in million
- Encephalitis – 1 in 8 million
International Health Regulations

• Passengers travelling to and from YF endemic countries (countries where Yellow Fever disease is persisting) are required to be in possession of a “VALID YELLOW FEVER VACCINATION CERTIFICATE” issued by authorized and designated vaccination centers in India.

• There are 44 Govt of India authorized YFVCs in India.

• Those found not in possession of such Valid certificate or defective certificate as enumerated by the WHO, are upon reporting by the Immigration Officers are quarantined for a period till the YF certificate becomes “valid” or until a period of six days, reckoned from the date of last possible exposure to infection, has elapsed, whichever occurs first.
Yellow Fever Vaccination at KGMU Lucknow

• GOI authorised YFVC started on 15-12-2016
• Persons from Uttar Pradesh, Uttarakhand, Jharkhand, Bihar and Nepal attend this YFVC for Vaccination
• Validity starts 10 days after vaccination
• Life Time Validity
• Vaccination Days- Monday, Thursday and Saturday
  --Registration 9 AM to 10 AM
  --Vaccination 10 AM to 1 PM
Yellow Fever Vaccination & Quarantine

Procedure for taking Yellow Fever Vaccination

Passengers planning to travel to or passing through any of the Yellow Fever endemic country/ies even while seated within the aircraft, are required to have the vaccination and in possession of VALID YELLOW FEVER CERTIFICATE in Original at all times, complete in all respects as per standards laid down by the WHO in its Regulations.

Since the Vaccine is developed and prepared in Chick Embryo, anyone having Allergy to Egg protein must not take the vaccination, as it is likely to lead to severe anaphylactic reaction, which could be fatal. Besides this other absolute contradictions are deficient immunity in individuals under medication for Thymus disease, Cancer, HIV/AIDS, on Corticosteroids for any reasons, suffering from any severe allergies. Those suffering from severe Asthmatic conditions should also avoid taking this vaccination.

The vaccination is valid after 10 days from the date of vaccination and duration of its validity is the life of the person vaccinated.

Vaccination Procedure

The vaccine beneficiary moves in following direction

Flow of vaccine Beneficiary

Registration counter — waiting area — Injection Room — Observation Room

- Yellow Fever Vaccination received in India is valid only if it is received from Govt. of India recognized centers only.
- 10 PERSONS ARE REQUIRED IN THE LAST BATCH (AS THE VACCINE AVAILABLE VIAL IS OF 10 DOSE EACH & IT IS OPENED ONLY WHEN 10 PERSON ARE AVAILABLE)
- FEE - RS.300/- FOR ONE VACCINE, fixed by Govt. of India from time to time.

Mandatory Requirement – Original Passport

- There has to be gap of four weeks between two different live vaccines.

The procedure for Yellow Fever Vaccination:

1. The vaccination services are to be provided on the first come first served basis.
2. The registration / token distribution system may be followed to maintain the first come first served system.
3. At time of registration, the Travel Document (passport) is to be checked and all the vaccinees are instructed to read the necessary information regarding Yellow Fever Vaccination displayed in the registration / waiting area.
4. The vaccinees are informed to bring/keep the Travel Document (passport) and the vaccination fee Rs.300/- with them at the vaccination time.
5. All the vaccinees are instructed to wait in the waiting area and the vaccinees are called for vaccination in batches of 10 persons in vaccination room.
6. All the vaccinees are informed and allowed to read about the side effects / adverse reactions and other related information about Yellow Fever Vaccination.
<table>
<thead>
<tr>
<th>District (State)</th>
<th>Location</th>
<th>Address</th>
<th>Contact Details</th>
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<tbody>
<tr>
<td>KARNATAKA (01)</td>
<td>Public Health Institute, Bengaluru</td>
<td>Joint Director (Labs), Public Health Institute, Sheshadri Road, Opp. S.J. Polytechnic, Bengalure-560001</td>
<td>Wednesday 10:30 AM - 12:00 PM</td>
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<td>UTTAR PRADESH (01)</td>
<td>King George's Medical University, UP, Lucknow-226003</td>
<td>Department of Community Medicine &amp; Public Health, KGMU, Lucknow</td>
<td>Monday and Thursday Registration: 09:00 AM - 10:00 AM Vaccination: 10:00 AM - 1:00 PM</td>
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| DAMAN & DIU (02) | Community Health Centre, Moti Daman | Fort Area, Moti Daman, Daman Union Territory - 396 210 | 1st and 3rd Tuesday of Every Month 9:30 AM - 12:30 PM |
|                 | Community Health Centre, Ghoghla, Diu | Community Health Center, Ghoghla, Diu(U.T.) | 1st and 3rd Tuesday of Every Month 9:30 AM - 12:30 PM |
|                 |          |         |                | 0260-2230847 (O) 02875-252244 (O) |

| ODISHA (01) | AllMS, Bhubaneshwar | Patrapada, Chotaraypur, Dumduma, Bhubaneshwar, Odisha - 751019 | Monday and Thursday 9:00 AM - 1:00 PM |
|             |          |         |                | 0674 - 2476789 (O) |

| CHATTISGARH (02) |          |         |                | |
|                 |          |         |                | |
Yellow Fever Vaccination Centre KGMU
King George's Medical University, U.P., Lucknow
YELLOW FEVER VACCINATION CENTRE
FLOW CHART

1. Reception in Waiting Hall
2. Checking of Original Passport
3. Consent Form Filled
4. Payment of Vaccination Charges Rs 300/-
5. Payment of Registration Charges Rs 51/- and online registration
6. YELLOW FEVER VACCINATION
7. Observation in Waiting Hall for 1-2 hours
8. Issue of YELLOW FEVER Vaccination Certificate
Yellow Fever Vaccination Certificate-Old
This is to certify that
Je soussigne (e) certifie que

姓氏
10/02/1940
Sexe

Has on the date indicated been vaccinated or revaccinated against yellow fever.
Date: 17 SEP 2018

Dr. Jamal Masood
Professor
Department of Community Medicine
King George's Medical University, UP

Lot No. 571
FSBSI Chumakov
FSC R&D
Moscow
Russian Federation

LIFETIME VALIDITY
This certificate is valid only if the vaccine used has been approved by the World Health Organisation and if the vaccinating centre has been designated by the health administration for the territory in which that centre is situated.

The validity of this certificate shall extend for a period of ten years, beginning ten days after the date of vaccination or, in the event of vaccination within such period of ten years, from the date of that revaccination.

Any amendment of this certificate, or erasure, or failure to complete any part of it may render it invalid.

Ce certificate n'est valable que si le vaccin employé a été approuvé par l'Organisation Mondiale de la santé et si le centre de vaccination a été habilité par l'administration sanitaire du territoire dans lequel ce centre est situé.

La validité de ce certificat couvre une période de dix ans commençant dix jours après la date de la vaccination ou, dans le cas d'une revaccination au cours de cette période de dix ans, le jour de cette revaccination.

Ce certificate doit être signé par un médecin de sa propre main, son cachet officiel ne pouvant être considéré comme tenant lieu de signature.
<table>
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<tr>
<td>Name</td>
<td>CHANDRVAI</td>
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<td>Passport No. or Travel Document No.</td>
<td>Z2630107</td>
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**DEPARTMENT OF COMMUNITY MEDICINE & PUBLIC HEALTH**

**KING GEORGE'S MEDICAL UNIVERSITY UP, LUCKNOW-226003 INDIA**

**स्वास्थ्य सेवा महानिदेशालय, नई दिल्ली**

(Directorate General of Health Service, New Delhi)
(Director Generale des Services d'Hygiene, New Delhi)
Yellow Fever Vaccination Card-New

Serial No.__________________

International Health Regulations (2005)
Règlement sanitaire international (2005)

Issued to / Délivré à:__________________________

Passport Number
Numero du passeport:__________________________

International Certificate of Vaccination or Prophylaxis
Certificat international de vaccination
**INTERNATIONAL CERTIFICATE OF VACCINATION OR PROPHYLAXIS/CERTIFICAT INTERNATIONAL DE VACCINATION OU DE PROPHYLAXIE**

This is to certify that (name) has on the date indicated been vaccinated or received prophylaxis against YELLOW FEVER VACCINE in accordance with the international Health Regulations. Conformément au Règlement sanitaire international.

<table>
<thead>
<tr>
<th>Vaccine or prophylaxis</th>
<th>Date</th>
<th>Signature and professional status of supervising clinician</th>
<th>Manufacturer and batch no. of vaccine or prophylaxis</th>
<th>Certificate valid From:</th>
<th>Official stamp of the administering centre</th>
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<tbody>
<tr>
<td>Yellow Fever Vaccine</td>
<td></td>
<td>Dr. JAMAL MABOOD</td>
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**LIFETIME VALIDITY**
## Persons vaccinated at YFVC KGMU Lucknow

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<tr>
<td>2018</td>
<td>January</td>
<td>December</td>
<td>12 months</td>
<td>2554</td>
</tr>
<tr>
<td>2019</td>
<td>January</td>
<td>December</td>
<td>12 months</td>
<td>3600</td>
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THANK YOU