Public Health England

# Multiple Choice Questions on Immunisation against Infectious Disease

## The Green Book

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# About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

Public Health England
Wellington House
133-155 Waterloo Road
London
SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: @PHE_uk
Facebook: www.facebook.com/PublicHealthEngland



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# Contents – Questions

These MCQs have been devised to help you test your knowledge and understanding of each of the chapters of the 'Green Book – Immunisation against infectious disease'. To make best use of the MCQs as a learning and revision tool we recommend that you read a chapter in detail before attempting the relevant questions. We have also prepared an answer key.

To receive this answer key please e-mail EastofEnglandHPT@phe.gov.uk quoting MCQs Green Book in the subject box, and stating:

- Your professional group (Paediatrician, CCDC, GP, Practice Nurse, Health Visitor, School Nurse, other - please state)

- The Region/Country in which you are working.

# Chapter 1 – Immunity and How Vaccines Work

**1. Which of the following confer(s) passive immunity:**

a) Hepatitis B vaccine
b) MMR vaccine
c) Hepatitis B immunoglobulin
d) Infection with measles virus
e) Cross placental transfer of maternal antibodies

**2. Immunoglobulins are made:**

a) In a laboratory from deactivated viruses and bacteria
b) From the plasma of a person in the acute phase of an infectious disease
c) From the pooled plasma of blood donors
d) From protein produced artificially in a laboratory
e) From treating red blood cells

**3. In the immune system:**

a) B lymphocytes secrete antibodies
b) Vaccines provide passive immunity
c) B cells stimulate T cells to produce antibodies
d) Cell-mediated immunity is controlled by T lymphocytes
e) Macrophages neutralise toxins

**4. Which of the following is/are true about conjugated vaccines:**

a) Conjugated vaccines are those in which there is more than one vaccine antigen e.g. MMR
b) Conjugated vaccines tend to induce a poorer response than polysaccharide vaccines
c) Meningitis C vaccine is not available in a conjugated form
d) Hib vaccine is an example of a conjugated vaccine
e) Conjugation involves attaching a polysaccharide antigen to a carbohydrate carrier

**5. Which of the following is/are true:**

a) Immunological memory is only present if there are detectable antibodies
b) The response to vaccine antigen is dominated by IgG initially followed by IgM
c) Herd immunity reduces the risk of unvaccinated individuals being exposed to infection
d) Pertussis vaccine contains an inactivated toxin (toxoid)
e) BCG is a live vaccine

**6. Specific immunoglobulins are available for:**

a) Rabies
b) Pertussis
c) Tetanus
d) Rubella
e) Varicella Zoster

## Chapter 2 – Consent

**1. Consent to immunisation:**

a) Must be obtained in writing
b) Need only be obtained once, provided it is documented
c) Is voluntary
d) Can be given by a person aged 16 years for themselves
e) Should include provision of information on the process, benefits and risks of immunisation

**2. Before administering an immunisation one should:**

a) Confirm the person still gives their consent
b) Ensure the person bringing a child for immunisation has parental responsibility for the child
c) Obtain the consent in writing
d) Ensure consent is documented in the patient's records
e) Confirm the person/parent understands what is happening

**3. Which of the following people may give consent to immunisation:**

a) An adult for themselves
b) A child of any age who can demonstrate "Gillick competence"
c) The next of kin of an adult unable to given their own consent
d) The natural father of a child, if named on the birth certificate
e) Any person with parental responsibility for a child

## Chapter 3 – Cold Chain

**1. Maintaining the cold chain ensures that vaccines are stored according to the manufacturer's instructions at:**

a) 0- +4°C
b) -1- +5 °C
c) +2 - +10 °C
d) +4 - +8 °C
e) +2 - +8 °C

**2. Which of the following is/are true of a vaccine refrigerator:**

a) An ordinary domestic refrigerator is sufficient provided it has only vaccines stored in it
b) Can be used to store urine samples
c) Should be lockable or in a lockable room
d) Should be away from radiators
e) Are best plugged into a switchless socket

**3. Vaccines should be:**

a) Taken out of their original packaging to save space in the refrigerator
b) Stored in the bottom drawers of the refrigerator
c) Packed tightly in the refrigerator
d) Protected from light during storage
e) Never be given to patients to transport or store

**4. Immunoglobulins:**

a) Should be protected from light
b) Should be stored at +2-+8 °C
c) May be frozen
d) Will tolerate room temperatures for up to one week, but should be refrigerated
e) May be sent by post

## Chapter 4 – Immunisation Procedures

**1. Which of the following vaccines is/are given by the intramuscular route:**

a) Influenza
b) BCG
c) Cholera
d) MMR
e) Varicella

**2. The most suitable site(s) for intramuscular and subcutaneous vaccination is/are:**

a) Anterolateral aspect of the thigh
b) Deltoid area of the upper arm
c) Fatty area of buttock
d) Anywhere in buttock
e) All of the above

**3. Which of the following is/are true when giving a vaccine:**

a) If the skin is clean no further cleaning is necessary
b) The skin should be disinfected prior to administering any vaccine
c) Only visibly dirty skin needs to be washed with soap and water
d) The needle should be sufficiently long (25mm) for all ages except for pre-term and very small children
e) Skin should be stretched, not bunched

**4. After giving a vaccine you should always:**

a) Observe the recipient for immediate adverse reactions (ADRs)
b) Keep the recipient under longer observation in the surgery
c) Dispose of equipment used for vaccination in a ‘sharps’ box
d) Keep accurate and accessible records of both the recipient and the vaccine given
e) All of the above

**5. Which of the following is/are true about vaccine administration:**

a) It is better to inject vaccine into fat than muscle
b) A 25mm needle length is suitable for all age groups
c) A 16mm needle length is only recommended for pre-term or very small infants
d) The deltoid area of the upper arm is generally preferred for infants under 1 year old
e) The anterolateral region of the thigh is generally preferred for older children and adults

**6. If given in the same limb as another vaccine, the second vaccine should be separated by at least:**

a) 0.5cm
b) 1.5cm
c) 2.5cm
d) 3.5cm
e) None of the above

## Chapter 5 – Immunisation by Nurses and Other Professionals

**1. Patient Group Directions (PGDs):**

a) Can be used to administer an unlicensed vaccine
b) Should state that a Black Triangle medicine is being used
c) Are verbal instructions for the supply or administration of medicines to a group of patients who may not be individually identified before presentation
d) Are legally required to be reviewed at least every 2 years
e) Are a form of prescribing vaccines

**2. A Patient Group Direction (PGD) must be signed by:**

a) A senior nurse and a senior doctor
b) A senior nurse and a senior pharmacist
c) A senior doctor and a senior pharmacist
d) A practice manager and a GP
e) 2 nurse prescribers

**3. A Patient Specific Direction (PSD):**

a) Should not be used in preference to a Patient Group Direction
b) Is the usual method for the supply and administration of vaccines in the routine childhood immunisation schedule
c) Does not require the patient/s to be named
d) Can be a verbal instruction in a busy clinic situation
e) Allows a prescriber to instruct another health professional in writing to supply or administer a medicine

## Chapter 6 – Contraindications and special considerations

**1. Vaccination with a live vaccine should be deferred if:**

a) The patient has received immunoglobulin in the past three months
b) The patient is receiving systemic high-dose steroids
c) The patient is a premature infant
d) The patient is breastfeeding
e) The patient has a family history of epilepsy

**2. Which of the following is/are contraindications to all vaccines:**

a) An allergy to eggs
b) Pregnancy
c) Receiving immunoglobulin in the past three months
d) A documented history of the disease
e) Personal history of febrile convulsion

**3. Patients with the following conditions may safely be given any immunisation:**

a) Asthma
b) Low birth weight
c) A patient with G6PD deficiency
d) Myeloma
e) A history of jaundice at birth

**4. A severely immunocompromised patient can receive the following vaccines:**

a) Diphtheria/tetanus/inactivated polio combined (Td/IPV)
b) MMR
c) Pneumococcal conjugate
d) Hepatitis B
e) Hib/MenC combined

**5. Which of the following should not receive live vaccines:**

a) Patients suffering from hay fever
b) Adults receiving at least 40mg of prednisolone per day for more than one week
c) Patients who received a stem cell transplant from a donor 18 months ago
d) A patient taking a corticosteroid inhaler
e) Patients with Wiskott-Aldrich syndrome

# Chapter 7 – Immunisation of Those with Underlying Medical Conditions

**1. For those about to start immunosuppressive treatments:**

a) Inactivated vaccines should be administered at least 2 weeks before treatment starts
b) Inactivated vaccines should never be administered after the start of treatment
c) Their close contacts should be considered for vaccination against varicella and influenza
d) Patients receiving complement inhibitor therapy are at increased risk of meningococcal infection but not pneumococcal disease
e) Those who receive bone marrow transplants should be considered for re-immunisation post treatment

**2. Those who have no spleen, or splenic dysfunction should have:**

a) Hib/Men C vaccine
b) Men B vaccine
c) Meningococcal ACWY conjugate vaccine
d) Pneumococcal vaccine
e) Varicella vaccine

**3. A patient aged 7 is up to date with their vaccinations. They lose their spleen after an accident. They need the following vaccines:**

a) Varicella vaccine
b) Single dose of PCV 13
c) Hib/Men C booster, PPV 23 and Men B vaccines followed by a second dose of Men B and Men ACWY one month later
d) Hib/Men C booster, PPV 23 and Men B vaccines followed by a second dose of Men B and Men ACWY two months later
e) Additional dose of MMR vaccine

**4. Premature infants should receive their first dose of the primary immunisation:**

a) 2 months from the actual date of delivery
b) 2 months from the estimated date of delivery
c) Only when they weigh at least 1.5kg
d) Only once they have been discharged from hospital
e) None of the above

**5. Influenza vaccine is specifically indicated in individuals with:**

a) Diabetes
b) Cochlear implants
c) Complement disorders
d) Haemophilia
e) Chronic kidney conditions (including haemodialysis)

**6. A child with splenic dysfunction first diagnosed at 9 months will require:**

a) Influenza vaccine
b) Two doses of Men B vaccine at least 2 months apart
c) An additional dose of Men B vaccine at aged 2
d) Hepatitis B vaccine
e) 2 doses of Men ACWY vaccine at least one month apart

**7. Immunosuppressed patients can be protected against some infections by administration of immunoglobulin post exposure to:**

a) Chicken pox
b) Diphtheria
c) Rubella
d) Measles
e) Influenza

## Chapter 8 – Vaccine Safety and Adverse Events Following Immunisation

**1. Signs of anaphylaxis include:**

a) Angioedema
b) Tachycardia
c) Wheeze
d) Hypertension
e) Urticaria

**2. A further dose of the same vaccine should not be given if the patient develops:**

a) Pain, swelling or redness of the site
b) Irritability
c) Headache
d) Cardiovascular collapse and other anaphylactic reactions
e) Temperature above 37.5$^{o}$C

**3. In the case of anaphylactic reaction to a vaccine in a community clinic you should:**

a) Seek additional health professional assistance
b) Ask a responsible person to dial 999 and state that there is a suspected anaphylaxis
c) Stay with the patient all the time
d) Manage the patient entirely in the clinic, if they appear to make a full recover
e) Send the patient to a nearest hospital

**4. In a suspected anaphylactic reaction adrenaline (epinephrine) 1:1,000 should be given:**

a) Intradermally
b) Subcutaneously
c) Intramuscularly (IM)
d) Intravenously (IV)
e) Any of the above

**5. In case of anaphylaxis, half of the usual adrenaline dose should be given to those taking:**

a) Beta blockers
b) Tricyclic antidepressants
c) Monoamine oxidase inhibitors
d) Cocaine
e) All of the above

## Chapter 9 – Surveillance and Monitoring for Vaccine Safety

**1. If a vaccine carries the Black Triangle symbol this indicates:**

a) It is a vaccine which must be administered under hospital supervision
b) The vaccine is not yet licensed in the UK
c) All suspected reactions (serious and non-serious must be reported)
d) The vaccine can only be used on a named-patient basis
e) Only reactions in children need to be reported

**2. The Yellow Card Scheme:**

a) Reports submitted to the Yellow Card Scheme are entered on a database operated by the Health and Safety Executive (HSE)
b) Is not applicable to vaccines given Black Triangle status
c) Allows patients to report suspected adverse reactions
d) Only serious adverse reactions should be reported for vaccines that have been marketed for 6 months or more
e) Is a compulsory reporting system for suspected adverse reactions

**3. A defect in a vaccine product should be reported:**

a) Using the Yellow Card Scheme
b) Using the Black Triangle Scheme
c) To a report centre of the Medicines and Healthcare products Regulatory Agency (MHRA)
d) Only to the vaccine manufacturer
e) Only if it has caused an adverse reaction in a patient

## Chapter 10 – Vaccine Damage Payment Scheme

**1. The Vaccine Damage Payment Scheme:**

a) Provides a single tax free payment to successful claimants
b) Is provided to people/families of someone suffering severe mental disablement as a result of immunisation against specified diseases
c) Does not cover severely disabled children born to mothers vaccinated against specified diseases in pregnancy
d) Does not cover severe disablement in a person in close contact with someone immunised with oral polio vaccine
e) Is provided to people/families of someone suffering severe physical disablement as a result of immunisation against specified diseases

**2. Vaccines covered by the Vaccine Payment Damages Scheme include:**

a) Diphtheria
b) Hepatitis A
c) Rubella
d) Hepatitis B
e) Yellow fever

**3. Vaccines covered by the Vaccine Payment Damages Scheme include:**

a) Typhoid
b) Measles
c) Tick-borne encephalitis
d) *Haemophilus influenzae* type B
e) Influenza

**4. Vaccines covered by the Vaccine Payment Damages Scheme include:**

a) Japanese Encephalitis vaccine
b) HPV vaccine
c) Cholera vaccine
d) Pertussis
e) BCG vaccine

**5. To be successful claims must meet the following criteria:**

a) The disabled person can be of any age
b) The disabled person can have been vaccinated in any country in the European Union
c) The disabled person must have been immunised before their 18th birthday if the claim is for polio vaccine
d) If the disabled person is deceased the claim must be made before they would have reached their 21st birthday
e) Claimant must have been assessed by a doctor

**6. To be successful claims must meet the following criteria:**

a) Claims must be made on or before the disabled person's 21st birthday
b) Disability is assessed using a percentage disability test similar to that used for assessing industrial injuries
c) The disabled person can have been immunised at any age against a specified disease, provided this was undertaken during an outbreak in the UK or Isle of Man
d) Any immunisations given by HM Armed Forces should be clearly identified, as these are excluded from the scheme
e) Claims must be made within six years of the date of vaccination, or before the disabled person's 16th birthday, whichever is the later

**7. Under the claims procedure:**

a) All decisions are made by the Secretary of State for Work & Pensions
b) An assessment is made on the balance of probability that disability is the result of immunisation with the percentage level of disablement attributable
c) There is no appeal
d) The independent Vaccine Damage Tribunal decision is final
e) A request for the reversal of the claim decision can be made in writing providing an explanation of why it is believed the decision given is wrong

## Chapter 11 – Immunisation Schedule

**1. In the UK immunisation programme all children should be protected against:**

a) Diphtheria
b) Pertussis
c) Polio
d) Measles
e) Hepatitis B

**2. The combined vaccine given at 2, 3 and 4 months of age is:**

a) DTaP/IPV/Hib
b) DTaP/IPV/PCV
c) DTaP/IPV/MenC
d) DTP/IPV/Hib
e) DTaP/IPV/PPV

**3. By 14 months of age all children should have received:**

a) Three doses of DTaP/IPV/Hib
b) Three doses of PCV
c) Three doses of MenB
d) Two doses of MMR
e) 3 doses of Rotavirus vaccine

**4. A child aged 2 years and 3 months has just joined your practice. Vaccination was begun abroad, but the parents are vague about what was given and there is no documentation. Which of the following would you give to the child:**

a) Three doses of DTaP/IPV/Hib
b) Two doses of MenB
c) Two doses of PCV
d) One dose of MMR
e) One dose of Hib/MenC

**5. The number of doses of diphtheria/ tetanus and polio vaccines required to ensure long-term protect throughout adulthood is:**

a) Three
b) Four
c) Five
d) Six
e) None of the above

**6. Which of the following is/are true:**

a) A child coming to the UK who has had a fourth dose of a diphtheria/tetanus/pertussis containing vaccine at 18 months will not need a pre-school booster
b) The school leaver booster contains the higher dose of diphtheria toxoid (D)
c) If any course of immunisation is interrupted, there is no need to start the course again
d) Children should receive two doses of conjugated pneumococcal vaccine (PCV) in the 1st year of life
e) Premature babies are at increased risk of adverse reactions from vaccines

**7. At around 14 years of age children should receive:**

a) Men ACWY vaccine
b) DTaP
c) DT/IPV
d) Td/IPV
e) Td

**8. The adult immunisation programme includes:**

a) Men C vaccine in those under 35 who are unvaccinated
b) Annual pneumococcal polysaccharide vaccine for those aged 65 and above
c) Annual influenza vaccine for those aged 65 and above
d) One dose of shingles vaccine for those aged 70 and above
e) Two doses of shingles vaccine for those aged 65 and above

**9. The following is/are true about vaccination in pregnancy:**

a) Inactivated influenza vaccines are preferred to live attenuated vaccine in pregnancy
b) Influenza vaccine should be offered to pregnant women after the second trimester
c) A temporary programme for the vaccination of pregnant women against pertussis was introduced in October 2012
d) Influenza vaccine should not be given at the same time as pertussis vaccine as it might affect response to that vaccine
e) Vaccination of pregnant women will provide active immunity against influenza in the first few months of life in the baby

**10. The following is/are true about the UK routine schedule:**

a) HPV vaccine is offered to girls and boys aged 12-14
b) From September 2014 the HPV schedule will consist of 2 doses of vaccine at least 3 months apart
c) 2 doses of oral rotavirus vaccine are given at 2 months and 3 months
d) The first dose of primary immunisations can be given from 6 weeks of age if required in certain circumstances
e) Rotavirus vaccine should not be started later than 10 weeks of age

## Chapter 12 – Immunisation of Healthcare and Laboratory Staff

**1. In addition to being up to date with the routine immunisations, which of the following should be considered for healthcare staff involved in direct patient contact:**

a) BCG
b) Hepatitis B
c) Influenza
d) Varicella
e) Hepatitis A

**2. Which of the following vaccines is/are routinely recommended for non-clinical staff in healthcare settings (i.e. not directly involved in patient care):**

a) BCG
b) MMR
c) Influenza
d) Varicella
e) None of the above

**3. Satisfactory evidence of protection against Measles and Rubella would include:**

a) Documentation of having received one dose of MMR
b) Documentation of having received two doses of MMR
c) Positive antibody tests for Measles and Rubella
d) A recollection of having Measles and Rubella infection in childhood
e) None of the above

**4. In addition to being up to date with the routine immunisation, which of the following should be given to the relevant laboratory and pathology staff:**

a) BCG
b) Hepatitis B
c) Polio booster every ten years for those handling faecal specimens
d) A booster of diphtheria if necessary
e) All of the above

## Chapter 13 – Anthrax

**1. Which of the following is/are true about anthrax:**

a) It is spread by spores of the anaerobic bacillus *Bacillus anthracis*
b) Has an incubation period of 2-7 days
c) Can cause cutaneous, inhalational and gastrointestinal infections
d) It primarily affects carnivorous animals
e) Is difficult to treat with antibiotics even if diagnosed early

**2. Which of the following would be routinely considered for anthrax vaccine in the UK:**

a) Textile workers working with goat hair
b) Veterinary surgeons
c) First responders attending a confirmed anthrax spore release incident
d) Bonemeal workers
e) Health Care staff working on an Infectious Diseases Unit

**3. Which of the following is/are true about anthrax vaccine:**

a) It is a live attenuated vaccine
b) The vaccine course consists of three doses given at 3 week intervals
c) It can be given to pregnant women
d) It is administered by intramuscular injection
e) A reinforcing dose should be given every 3 years to those at continued risk

**4. Anthrax:**

a) Is a notifiable disease
b) Primarily affects herbivorous animals
c) Is a common animal disease in Western Europe
d) Is fatal in around 20% of cases
e) Has been described in IV drug users in the UK

**5. Adverse reactions to anthrax vaccine can include:**

a) Swelling at the injection site
b) Urticaria
c) Regional lymphadenopathy
d) Generally a higher risk of a reaction after subsequent doses if there was a reaction to the first dose
e) Cutaneous anthrax at the injection site in a very small number of cases

**6. Which of the following is/are true:**

a) Immunoglobulins are effective if given as post exposure prophylaxis to anthrax
b) Anthrax vaccine should not be given at the same time as live vaccines
c) A person who has had a severe local reaction to the first dose of anthrax vaccine should not receive a second dose
d) Patients with HIV infection and a very low CD4 count should not receive anthrax vaccine
e) Anthrax vaccine contains an aluminium adjuvant and thiomersal

## Chapter 14 – Cholera

**1. Which of the following statements is/are true regarding cholera vaccines available in the UK:**

a) There are two vaccines available one for oral and one for intramuscular administration
b) The oral vaccine is a live vaccine.
c) The oral vaccine protects against four strains of *V. cholerae* O1
d) The oral vaccine contains recombinant B toxins
e) The oral vaccine is thiomersal free

**2. Cholera vaccines:**

a) Should be stored in their original packaging
b) Can be used for post exposure prophylaxis
c) Should be protected from light in storage
d) Can be used safely after freezing
e) Can be stored at room temperature

**3. Oral cholera vaccine should be administered to anyone over the age of 6 years as follows**

a) First dose is given with food
b) Second dose is given between one and six weeks after the first dose
c) It is necessary to use the sodium hydrogen carbonate buffer power when preparing the vaccine for administration
d) No other vaccines should be given at the same time as the cholera vaccine
e) Can be stored at room temperature

**4. Oral cholera vaccine should be administered to anyone over the age of 6 years as follows**

a) The buffer sachet should be mixed with 150 ml of cold water in a disposable plastic cup
b) Vaccinees should avoid food, drink and oral medicines for an hour before to an hour after administration
c) The vaccine solution when mixed with the buffer solution can be kept for 8 hours before drinking
d) The second dose should be administered at least a week before potential exposure
e) If more than 2 years have elapsed since the last cholera vaccination the primary course must be repeated

**5. Which of the following is/are true about oral cholera vaccine:**

a) The vaccine is recommended for use in children under the age of 2 years
b) There is data suggesting a excellent protective efficacy profile after booster doses
c) The vaccine when constituted should be a blue liquid
d) The vaccine is not recommended for prevention of travellers diarrhoea
e) Immunisation does not protect against *V Cholerae serogroup 0139*

**6. Oral cholera vaccine is considered for the following:**

a) Relief and disaster aid workers
b) Anyone visiting an area where a cholera epidemic is occurring
c) Sewage workers in the UK
d) Nurses working on an infectious diseases unit in the UK
e) People with a past history of traveller's diarrhoea

**7. Cholera vaccine should not be given to the following:**

a) Severely immunocompromised individuals
b) Anyone who is acutely unwell
c) Pregnant and breast-feeding women
d) Anyone who is HIV positive
e) Those with pre-existing gastro-intestinal disorders

**8. Adverse reactions attributable to oral cholera vaccine include:**

a) A rash at a rate of 1 per 1,000 doses
b) A flu-like syndrome at a rate of less than 1 per 10,000 doses
c) Mild gastro-intestinal symptoms at a rate of 1 per 100-1,000 doses
d) Arthralgia (joint pains) at a rate of fewer than 1 per 1,000 doses
e) Paraesthesia ("pins and needles") at a rate of 1 per 100 doses

## Chapter 15 – Diphtheria

**1. Which of the following is/are true about Diphtheria:**

a) *Corynebacterium diphtheriae* is the only bacterium causing diphtheria
b) Those carrying *C diphtheriae* are always ill
c) Diphtheria toxin affects the heart, nerves and adrenal tissues
d) Infected people may be infectious for up to four weeks if untreated
e) *Corynebacterium diphtheriae* may cause skin infections

**2. In the UK:**

a) About half of adults over 30 years are susceptible to diphtheria
b) Diphtheria vaccine was introduced in the 1950s
c) An increase in notifications of diphtheria has been caused by a rise in numbers of isolations of non-toxigenic strains of *C diphtheriae*
d) Most cases of diphtheria are imported
e) Secondary cases of diphtheria are rare

**3. Which of the following is/are true about Diphtheria vaccines:**

a) They are live attenuated vaccines
b) They are produced in two strengths
c) They contain an adjuvant to improve immunogenicity
d) Higher dose diphtheria vaccines should be used for primary immunisation in the UK schedule in those under 10 years
e) Diphtheria vaccine is thiomersal free

**4. Which of the following is/are true about Diphtheria vaccine:**

a) It is only available in combination with other vaccines
b) When given as a primary immunisation course 2 weeks should be allowed between vaccinations
c) The first booster dose of diphtheria vaccine should be given at least 12 months after the last in the primary course
d) There should be 3 years between the first and second booster doses
e) If it has been given as part of a vaccination following a tetanus prone wound the routine booster is always necessary

**5. A 14 year old child who is up-to-date with their vaccine schedule stepped on a rusty nail at a riding school in France a year ago and was given a vaccination abroad following the injury. There is no written record of what was given, although the parents believe this was tetanus vaccine. The child has now presented for a school leaving booster, which of the following is/are true:**

a) The booster is not necessary
b) The risk of side effects from another tetanus vaccination so soon after the last one is such that Td/IPV should not be given
c) The vaccination given at the time of injury should be discounted and Td/IPV given now
d) The child should have a further tetanus vaccination in 10 years time
e) The child should be tested for tetanus antibodies before any further doses of tetanus vaccine

## Chapter 16 – Haemophilus Influenza Type B (Hib)

**1. Which of the following statements is/are true about Hib vaccine:**

a) Made from capsular polysaccharide that has been extracted from cultures of Hib bacteria
b) Has been conjugated with either non-toxic variant of diphtheria vaccine or tetanus toxoid
c) Is available as DTaP/IPV/Hib or Hib/PCV
d) Is thiomersal-free
e) Contains live organisms

**2. Which of the following is/are true about Hib/MenC vaccine:**

a) Can be given at the same time as other vaccine such as MMR and Hep B
b) Can also be given routinely at the same time as the booster of pneumococcal conjugate vaccine (PCV)
c) Is better given subcutaneously to reduce risk of local reaction
d) Should be given at least 2.5cm apart from other vaccines given in the same limb at the same session
e) None of the above

**3. Which of the following is/are true:**

a) Children under the age of 10 with asplenia or splenic dysfunction should complete the primary immunisation schedule
b) Those aged 10 years and over, with asplenia or splenic dysfunction should receive two doses of combined Hib/Men C vaccine two months apart if unimmunised
c) Those fully immunised with Hib who then develop splenic dysfunction, need no further doses of Hib containing vaccine
d) Hib vaccine should not be given to a person with a confirmed anaphylactic reaction to a previous dose of Hib-containing vaccine or component of the vaccine
e) None of the above

**4. Hib vaccine should be deferred in the following situations:**

a) Pregnancy and breast-feeding women
b) Premature infants
c) Immunosuppressed people or those with HIV infection
d) Those with stable pre-existing neurological conditions
e) Those with evidence of evolving neurological deterioration

**5. Which of the following should close contacts of a case of Hib infection be given:**

a) If they have never had any immunisation and are under 10 years old three doses of DTaP/IPV/Hib vaccine
b) If between 1-10 years of age and have never received Hib vaccine but have been vaccinated against diphtheria, tetanus, pertussis and polio, three doses of Hib/Men C
c) If aged between 1-10 years and have never been vaccinated against diphtheria, tetanus, pertussis and polio, one dose of Hib/MenC
d) Prophylaxis with isoniazid to the index case, and all household contacts, where there is any individual in the household who is also 'at risk'
e) Antibody tests to check if they are immune

## Chapter 17 – Hepatitis A

**1. Which of the following is/are true about Hepatitis A vaccine:**

a) The vaccine may cause mild jaundice 2-6 weeks after administration
b) It can be given to pregnant women when clinically indicated
c) Hepatitis A antibody levels should be tested to check for a response
d) Is only effective if given to unvaccinated contacts of Hepatitis A within 72 hours of the onset of jaundice in the index case
e) Should not be given to someone who may already be incubating Hepatitis A infection

**2. Which of the following is/are true:**

a) All available monovalent Hepatitis A vaccines are licensed for patients aged 12 years and above
b) There are paediatric Hepatitis A vaccines available which contain higher doses of antigen than the adult preparations
c) A booster dose of Hepatitis A vaccine should be given 6-12 months after the first
d) If the Hepatitis A booster dose is delayed the course should be restarted
e) A booster dose at 10 years is indicated for those at ongoing risk

**3. Hepatitis A vaccine is routinely recommended for the following groups:**

a) Food handlers working in a shellfish market
b) Individuals going to reside in Spain
c) Sewage workers
d) Patients with chronic renal disease
e) Injecting drug users

**4. Human Normal Immunoglobulin (HNIG):**

a) When being used as post-exposure prophylaxis for Hepatitis A may protect against disease if given within 14 days of exposure
b) Live vaccines (except yellow fever vaccine) should preferably not be given for 3 months after administration of HNIG
c) Can provide protection lasting up to 2-3 years
d) Should not be given to those with an allergy to eggs
e) The dose of HNIG for a child aged 5 years is 250 mg

**5. Which of the following Hepatitis A vaccine products is/are available:**

a) Combined Hepatitis A and B vaccine
b) Combined Hepatitis A and C vaccine
c) Monovalent Hepatitis A vaccine
d) Combined Hepatitis A and typhoid vaccine
e) Combined Hepatitis A and cholera vaccine

**6. Which of the following is/are true:**

a) HNIG is routinely recommended for travel prophylaxis for Hepatitis A
b) HNIG is usually administered subcutaneously
c) If HNIG is given live vaccines should preferably not be given for 3 weeks
d) Hepatitis A vaccine should preferably be administered at least 2 weeks before travel departure
e) After a dose of monovalent Hepatitis vaccine Hepatitis A antibodies are generally detectable in all individuals at 7 days using current assays

## Chapter 18 – Hepatitis B

**1. Which of the following statements is/are true regarding Hepatitis B infection:**

a) Infection results in jaundice in greater than 50% of all cases
b) The incubation period ranges from 14-60 days
c) Chronic disease is strongly linked to the development of liver cancer
d) Less that half of children infected per-natally develop chronic disease
e) Most of those infected as adults will become chronic carriers of HBV

**2. Hepatitis B vaccines:**

a) Are not effective in patients with acute hepatitis B
b) Are live attenuated vaccines
c) Fewer than 10% of adults fail to respond to hep B vaccines adequately
d) Are very effective if used for post-exposure prophylaxis
e) Work best in those aged over 40 years

**3. Hepatitis B vaccines:**

a) Contain hepatitis B core antigen prepared from yeast cells
b) All contain the same dosage
c) Should not be given to a person who may already have been exposed to Hepatitis B without checking for markers of past infection
d) Should not be administered into the buttock
e) Induce anti-HBs specific antibodies

**4. Which of the following people should receive pre-exposure Hepatitis B vaccine:**

a) Healthcare workers (including students/trainees) working in the UK
b) Staff working in residential accommodation for people with learning difficulties
c) Embalmers
d) Prison officers
e) Laboratory staff handling materials which may contain the virus

**5. Which of the following should receive pre-exposure Hepatitis B vaccine:**

a) Short term foster carers
b) Sewage workers
c) People receiving regular blood transfusions
d) People with chronic liver disease
e) People with chronic renal disease

**6. Which of the following should receive pre-exposure Hepatitis B vaccine:**

a) People living in residential accommodation with learning disabilities
b) Prison inmates
c) Intra-venous drug users
d) Household contacts of people who inject drugs
e) People who work with primates

**7. Post-exposure prophylaxis with HBIG is recommended for:**

a) Non-responders to hep B vaccine who have had a needlestick injury from a patient with acute hepatitis B
b) People who have had unprotected sexual intercourse with a case of acute of hepatitis B seen within one week of last contact
c) Babies born to women with chronic hepatitis B infection who are e antigen positive
d) People who have had unprotected sexual intercourse with a recently diagnosed case of chronic hepatitis B two weeks ago
e) Babies born to women who have developed acute hepatitis B infection during pregnancy

**8. Available pre-exposure hepatitis B immunisation schedules for high risk exposure in adults include:**

a) 0, 1 month, 2 months and 12 months
b) 0, 7 days, 21 days and 12 months
c) 0, 1 month, 6 months and 12 months
d) 0, 2 months, 6 months and 12 months
e) 0, 2 months, 3 months and 4 months

**9. An immunocompetent healthcare worker is found to have an anti-HBs level of 10 – 100 mIU/ml after a course of hepatitis B vaccine. Which of the following is/are true?:**

a) They need no further doses of hep B vaccine as satisfactory protection has been achieved
b) They should have 1 further dose of hep B vaccine
c) They should have 1 further course of hep B vaccine

d) They should have single booster dose of hep B vaccine after 5 years
e) They should receive a booster dose of hep B vaccine every 5 years

**10. The following is/are true of babies born to hep B positive mothers:**

a) If the mother is HBsAg positive and HBeAg the baby should receive a dose of HBIG at birth
b) If the mother is HBsAg positive, HBeAg negative and the baby weighs 1800g the baby should receive HBIG
c) The first dose of hep B vaccine should be given within 24 hours of birth
d) They should be tested for HBsAg at 6 months of age
e) They should be tested for HBsAg at 12 months of age

**11. Babies born after the 1st August 2017 in the UK whose mothers are NOT known to be hep B carriers should receive:**

a) Three doses of Hexavalent vaccine at 8, 12 and 16 weeks
b) A booster dose of Hexavalent vaccine at 1 year
c) A blood test for HBsAg at 1 year
d) A pre-school booster dose of Hexavalent vaccine
e) A blood test to measure response to the hep B vaccine 2 months after completion of the Hexavalent vaccine schedule

**12. Babies born after 1st August 2017 in the UK to hep B carrier mothers should receive:**

a) Doses of monovalent hep B vaccine at birth and 4 weeks
b) Three doses of Hexavalent vaccine at 8, 12 and 16 weeks
c) A dose of Hexavalent vaccine at 1 year
d) A dose of monovalent hep B vaccine at 1 year
e) A pre-school booster dose of monovalent vaccine at 3 years 4 months

**13. Which of the following should NOT be given Hepatitis B vaccine:**

a) Those with a confirmed anaphylactic reaction to a previous dose of Hepatitis B vaccine
b) Immunosuppressed individuals
c) Pregnant women
d) HIV positive people
e) Premature infants

## Chapter 18a – Human Papillomavirus

**1. The following is/are true about Human Papillomavirus (HPV) infection:**

a) HPV 18 is responsible for more than 50 % of all cervical cancers in Europe
b) HPV types 6 and 11 cause the majority of genital warts
c) 90 % of new HPV infections clear within 2 years
d) Approximately 100 types of HPV infect the genital tract
e) HPV can be transmitted from mother to newborn baby

**2. The following is/are true about HPV vaccines:**

a) They are contraindicated in yeast allergy
b) For planning purposes a vaccination schedule of 0 and 12 months is appropriate for both vaccines for girls aged 9-15 years
c) They are given intramuscularly
d) Individuals with immunosuppression or with HIV infection should not receive HPV vaccine
e) If a course of HPV infection is interrupted it should be repeated

**3. The following is/are true about Gardasil:**

a) It contains thiomersal
b) It contains HPV types 6,11,16 and 18
c) The second dose of 0.5 ml should be given at least 2 months after the first
d) There is evidence on the interchangeability of Gardasil and Cervarix
e) It can be given at the same time as Td/IPV and MMR vaccines but not Hepatitis B vaccine

**4. The following is/are true about Cervarix:**

a) It will provide protection against genital warts
b) There is no longer a supply of Cervarix available in the UK
c) It is supplied as a suspension of virus-like particles(VLPs) in a pre-filled syringe
d) The risk of local reactions is less if given intramuscularly rather than subcutaneously
e) It contains HPV types 11 and 16

**5. Which of the following is/are true about the scheduling of HPV vaccines:**

a) The HPV vaccine being routinely offered in the UK since September 2012 is Gardasil
b) If an individual has started a course of Cervarix then the course can be completed with Gardasil
c) Offering a full course of Gardasil following a partial or complete course of Cervarix is inadvisable
d) A vaccination schedule of 0, 1, 4-6 months is appropriate for both vaccines for girls commencing vaccine at age 15 years and above
e) If an HPV vaccine course is interrupted it should be resumed rather than be repeated

**6. In the UK the groups recommended to receive HPV vaccine include(s):**

a) Females aged 9-11 years
b) Males aged 12-13 years
c) Females aged 11 to under 18 years
d) Females aged 18 or over who have not already started a course of HPV vaccine
e) Females aged 18 or over who started the HPV course when they were under 18 years

**7. In the UK programme the following patient groups should <u>not</u> be routinely advised to receive HPV vaccine:**

a) Patients with immunosuppression
b) Patients with HIV infection
c) Patients who are pregnant
d) Males aged 11-18 years
e) Females coming to the UK from overseas under the age of 18 years with an uncertain immunisation history

## Chapter 19 – Influenza

**1. Which of the following is/are true:**

a) Influenza is caused by type A, B or C viruses
b) Influenza A is the usual cause of epidemics
c) Minor changes in the surface antigens of influenza A occur every year
d) "Antigenic shift" means a major change in the influenza A virus has occurred
e) The burden of influenza B disease is mostly in adults

**2. Which of the following is/are true about Influenza vaccines:**

a) They must be given annually
b) Current trivalent vaccines have two influenza A subtypes and one B subtype in them
c) Quadrivalent vaccines with an additional influenza A virus have become routinely available
d) Most of the vaccines are prepared from viruses grown in embryonated hens eggs
e) They may cause influenza in some individuals

**3. Influenza vaccine should be offered to the following:**

a) The main carer of a disabled person
b) Residential care home staff
c) All the inmates of a Young Offenders Institution
d) A pregnant woman
e) A Midwife

**4. Patients with the following conditions should have seasonal influenza vaccine:**

a) Class III obesity
b) Stage 2 chronic renal disease
c) Diabetes controlled by diet
d) Cystic Fibrosis
e) Severe learning disability

**5. The following is/are true about flu vaccine in pregnancy:**

a) Influenza vaccine is contraindicated in the first trimester of pregnancy
b) Influenza vaccine should be offered from the third trimester of pregnancy
c) Pregnant women are more likely to suffer side affects from the vaccine
d) Pregnant women who have received influenza vaccine are at slightly increase risk of miscarriage
e) Influenza vaccine given to the mother may provide passive immunity to the infant in the first few months of life

**6. Contraindications to Influenza vaccination include:**

a) Confirmed anaphylactic reaction to a previous dose of influenza vaccine
b) Confirmed anaphylactic reaction to egg products
c) A rash following a previous vaccination
d) Pregnancy
e) Aged less than 2 years

**7. Adverse reactions to inactivated flu vaccine may include:**

a) Pain and swelling at the injection site
b) High grade fever
c) Myalgia
d) Shivering
e) Clinical influenza

**8. Which of the following is/are true about LAIV Fluenz Tetra®:**

a) Cannot be given at the same time as other live vaccines
b) When LAIV Fluenz Tetra® is being administered the dose should be repeated if the patient sneezes or blows their nose
c) It may be left out of the refrigerator for a maximum of 48 hours at a temperature not above 25°C
d) It should not be administered within 48 hours of antiviral drugs
e) It is administered as a dose of 0.2 ml into each nostril

**9. The following is/are true about LAIV Fluenz Tetra®:**

a) It contains live attenuated virus
b) It is recommended for children with egg allergy
c) It is contraindicated in patients receiving low dose inhaled corticosteroids
d) If influenza vaccine has not been received previously a 3 year old child having LAIV Fluenz Tetra® should receive 2 doses
e) Can be administered by health care workers who are pregnant

**10. The following is/are true:**

a) LAIV Fluenz Tetra® is authorised for children aged 2 to under 10 years
b) Intanza® is an inactivated intradermal vaccine
c) Inactivated intramuscular vaccine can be given from 6 months of age
d) Pregnant women should be offered LAIV Fluenz Tetra®
e) Flu vaccines with a very low ovalbumin content are those with less than 0.12 micrograms/ml

**11. Which of the following is/are true of the adjuvanted inactivated vaccine Fluad®:**

a) It is a quadtrivalent vaccine
b) It should only be administered intramuscularly using a 25mm needle
c) It is licensed for use in those aged 55 and older
d) It contains the adjuvant MF59C
e) It is the recommended vaccine for pregnant women

## Chapter 20 – Japanese Encephalitis (JE)

**1. Japanese encephalitis:**

a) Is a tick borne viral encephalitis
b) Highest transmission rates occur during and just after dry seasons
c) Has an incubation period of 5-15 days
d) Is associated with a rate of approximately 10 % of neurological sequelae in survivors
e) Is not transmitted from person to person

**2. JE vaccine should:**

a) Be given to those who are going to an endemic or epidemic area
b) Be given to laboratory staff who have potential exposure to the virus
c) Not be given to those who have had a confirmed anaphylactic or serious systemic reaction to a previous dose of JE vaccine
d) Not be given to those who have had a confirmed anaphylactic reaction to any component of the vaccine
e) Not be given during pregnancy and breast-feeding

**3. Which of the following is true about JE vaccines:**

a) They contain no live organisms
b) They should be given by subcutaneous injection
c) There is currently only one licensed vaccine recommended for use in the UK - IXIARO
d) They can be given at the same time as other travel or routine vaccines
e) They are not usually recommended in children under 1 year of age

**4. Which of the following is/are true:**

a) IXIARO is licensed for individuals aged 2 months and older
b) For children aged 24 months of age the recommended vaccine schedule is 2 x 0.5 ml doses of IXIARO vaccine on days 0 and 28
c) The recommended primary schedule for IXIARO comprises 3 doses
d) Primary vaccination should be completed ideally at least one week prior to potential exposure to JE virus
e) A rapid schedule administered at days 0 and 14 is also licensed for adults aged 18 to 65

## Chapter 21 – Measles

**1. Recognised complications of infection with measles virus include:**

a) Otitis media
b) Convulsions
c) Pneumonia
d) Constipation
e) Joint pains

**2. Sub-acute sclerosing pan-encephalitis (SSPE):**

a) Is a fatal late complication of measles infection
b) Occurs in every 25,000 measles infections
c) Has increased in rate since the introduction of MMR vaccine
d) The risk of developing SSPE is greater if the child has measles infection after the age of one year
e) May take 20-30 years to develop post measles infection

**3. If a child has received a dose of MMR vaccine before the age of 12 months:**

a) They need only one further dose of MMR given at the same time as the pre-school booster immunisations
b) The child needs to receive two further doses of MMR vaccine given at 12-13 months and at the same time as the pre-school boosters
c) The response to a dose given before 12 months may be suboptimal due to persistence of maternal antibodies in the baby
d) This may increase the risk of an adverse reaction to any subsequent dose
e) It is worth checking for measles antibodies before deciding to give a further dose

**4. Which of the following is/are true about MMR vaccine:**

a) It is a live attenuated vaccine
b) It should not be given to children with autism
c) It should not be given in pregnancy
d) It is better not to give it if a person has a previous history of either measles, mumps or rubella
e) If the vaccine course is started after the age of 18 months a child needs two doses separated by 3 months

**5. Which of the following is/are true:**

a) A single dose of MMR vaccine confers protection against measles in about 80% of individuals
b) There is a link between Guillain-Barré syndrome (GBS) and MMR vaccine
c) A mild measles-like rash may develop 3 weeks after MMR vaccine
d) Allergy to egg is not an absolute contra-indication to MMR
e) There is no evidence of measles vaccine virus being found in breast milk

**6. Which of the following is/are true about managing contacts of measles:**

a) Advice should be sought from the local HPU or microbiologist
b) HNIG may be indicated in non-immune contacts who are pregnant, immunocompromised or under 9 months of age
c) In susceptible immunocompetent contacts in whom MMR is not contra-indicated a dose of MMR may protect them if given within 3 days of exposure
d) Where HNIG is given, an interval of at least 3 months must be allowed before subsequent MMR immunisation
e) Measles infection in pregnancy can lead to congenital malformation

## Chapter 22 – Meningococcal

**1. A diagnosis of meningococcal infection requires the following to be present:**

a) Headache
b) Neck stiffness
c) Photophobia
d) Drowsiness
e) Pyrexia

**2. Meningococcal infection in young infants:**

a) Rarely presents with an insidious onset
b) Will usually present with the classical signs of meningitis
c) Should be considered if the child has a raised anterior fontanelle, if still patent
d) Is likely to be present in an apyrexial child
e) Should be considered where a child is irritable

**3. Meningococci:**

a) Are most often harmless commensals colonising the nasopharynx
b) Are carried by about a quarter of adolescents, who show no signs of disease
c) Are transmitted by aerosol
d) Are usually transmitted with minimal contact
e) Cause infection most frequently in teenagers

**4. Meningococcal C conjugate (MenC) vaccine:**

a) Was introduced to the UK routine immunisation programme in 1999
b) The first dose is given in the UK primary vaccination schedule to children at 3 months
c) Should be offered as a single dose to anyone over the age of 10 years who has not completed the primary childhood schedule up to the age of 50
d) Is given as Hib/Men C vaccine between 12 and 13 months of age and as a component of ACWY vaccine in adolescence in the UK primary vaccination schedule
e) Children over the age of 1 and under the age of 10 who have not received any Men C vaccine should be offered a single dose of Hib/Men C vaccine

**5. Which of the following is/are true about children and adults with asplenia and splenic dysfunction:**

a) Children under one year of age should receive 2 doses of Men ACWY vaccine one month apart
b) Children presenting over two years of age and under ten should be given one dose of Hib/Men C vaccine, one dose of PPV23 and one dose of Men ACWY conjugate vaccine 1 year later
c) Adults who develop splenic dysfunction should be offered Men B vaccine
d) If travelling to a country at increased risk of A, W135 or Y disease children under 5 should be offered Men ACWY polysaccharide vaccine
e) Conjugate Men ACWY vaccine gives a poorer response than polysaccharide Men ACWY vaccine

**6. Meningococcal vaccines are contra-indicated in the following:**

a) Pregnant women
b) HIV positive people
c) Other people with severe immuno-compromising conditions
d) Premature infants
e) Breast feeding mothers

**7. Which of the following is/are true quadrivalent ACWY conjugate vaccines:**

a) They are live vaccines
b) They are conjugated to other CRM 197 or tetanus toxoid carrier proteins
c) They can provide limited cross protection against group B meningococcal disease
d) They provide longer lasting immunity than polysaccharide meningococcal vaccine
e) They are given intramuscularly

**8. Which of the following is/are recognised adverse reactions to meningococcal vaccines:**

a) Fever > 39.5°C with Hib/Men C conjugate vaccine
b) Atopic dermatitis occurring after MenC/Hib combined vaccine
c) Impaired sleep following MenC conjugate vaccine
d) Diarrhoea in infants and toddlers following MenC vaccine
e) Fever > 38°C and irritability in children under ten with 4CMenB vaccine Bexsero

**9. The following is/are true about quadrivalent ACWY vaccines for travel:**

a) Immunisation with ACWY vaccine is recommended for long stay visitors to sub-Saharan Africa
b) Children under 1 need one dose of Menveo®
c) Children aged between 5 and 10 need two doses of Menveo® or Nimenrix®
d) A dose of 4CMenB vaccine should routinely be given in conjunction with the ACWY vaccine to those travelling abroad
e) If an infant has already had Men C vaccination then Men ACWY should also be given

**10. The following is/are true about 4C Men B protein vaccine (Bexsero®):**

a) Bexsero® may protect up to 98% of circulating Men B strains in England and Wales
b) Bexsero® may also protect against infection by other capsular groups of meningococcus
c) Is currently recommended for all household contacts of an index case of invasive group B meningococcal disease
d) Is licensed for use from 2 months of age
e) Is made from one N.meningitidis protein

**11. The following is/are true about 4C Men B protein vaccine (Bexsero®):**

a) It is supplied as a vial of white powder with a separate diluent
b) In the routine immunisation schedule is given at 2 and 4 months with a booster at 12 – 13 months
c) In the routine immunisation schedule is given at 2, 3 and 4 months
d) It should be offered as a single dose to students attending university for the first time
e) Is now routinely recommended for individuals who are travelling or going to reside abroad

**12. Regarding the 4C Men B protein vaccine (Bexsero®):**

a) Post vaccination fever peaks at around 2 hours and has usually gone by 24 hours after vaccination
b) Three doses of paracetamol given prophylactically at the time of vaccination then at 4 – 6 hourly intervals reduces the fever
c) Ibuprofen has been found to be as effective as paracetamol in reducing the fever
d) The immunogenicity of other routine vaccines in infants co-administered with 4C MenB is not affected by giving paracetamol
e) Fever of ≥40°C in a child following a dose of Bexsero® is a contraindication to the child receiving a further dose of the vaccine

## Chapter 23 – Mumps

**1. Which of the following is/are true about mumps infection:**

a) All patients have bilateral swelling of the parotid glands
b) Asymptomatic infection does not occur
c) It was the commonest cause of viral meningitis in children before 1988
d) Neurological complications can occur without swelling of the salivary glands
e) Mumps is a common cause of sub-fertility

**2. Mumps vaccine:**

a) Is available only in the MMR vaccine
b) A single dose of a mumps antigen containing vaccine is around 64% effective
c) Should not be given if there is a history of mumps
d) Can be given at any age
e) Adverse reactions to the mumps containing vaccines may occur up to 6 weeks post vaccination

**3. Which of the following is/are true about MMR vaccines:**

a) It is effective prophylaxis if given after exposure to mumps infection
b) Will not exacerbate the symptoms if given to someone who is already incubating mumps infection
c) A mumps like illness occurring 2 days later MMR vaccine is likely to be due to the vaccine
d) It is better not to offer MMR if there is uncertainty about an individuals mumps vaccination status
e) Contact with suspected mumps infection is a good opportunity to offer MMR to a previously unvaccinated individual

## Chapter 24 – Pertussis

**1. The following is/are true about pertussis:**

a) The incubation period is between 12 to 20 days
b) Cases are at their most infectious during the early catarrhal phase
c) Cases can be infectious up to three weeks after the onset of symptoms
d) In the 2012 Pertussis outbreak the highest incidence of disease was in infants 3 to 6 months of age
e) Pertussis vaccine can also protect against similar illnesses caused by the organism B.parapertussis

**2. Which of the following is/are true about the acellular pertussis vaccines (Infanrix and Pediacel) used in the UK:**

a) They are conjugated vaccines
b) They offer equal or better protection than the whole–cell pertussis vaccine
c) They are only given as part of the combined products (DTaP/IPV/Hib) or DTaP/IPV or dTaP/IPV)
d) They are thiomersal-free
e) They can be given at the same time as other vaccines such as MMR and Hep B (but in a different site)

**3. Which of the following is/are true? For full protection against pertussis, infants and children under ten years of age need:**

a) Three doses of a pertussis vaccine–containing product with an interval of one month between each dose and a booster after three years
b) Three doses of DTaP/IPV or DTaP/IPV/Hib and a booster if they have never had pertussis vaccine, but have received three doses of vaccine against diphtheria, tetanus and polio
c) To repeat the course if the primary course is interrupted
d) Full UK schedule should be followed if no reliable history of previous immunisation is available
e) No further pertussis containing vaccine if they have had a clinical history of whooping cough

**4. Which of the following is/are true? Pertussis vaccine should not be given to:**

a) Those with confirmed anaphylactic reaction to a previous dose of a pertussis-containing vaccine or to neomycin, streptomycin or polymyxin
b) Pregnant women
c) Premature infants
d) Those with Immunosuppression and HIV infection

e) Those with stable pre-existing neurological condition

**5. Which of the following is/are true about prenatal pertussis vaccination:**

a) Vaccination should be offered starting from 26 weeks of gestation
b) Vaccine should be offered in every pregnancy
c) It should not be offered after 32 weeks of pregnancy as it is unlikely to offer any protection
d) Both Boostrix and Repevax are suitable for use in the prenatal programme
e) In exceptional circumstances Infanrix IPV can be given

## Chapter 25 – Pneumococcal

**1. Which of the following is/are true regarding pneumococcal infection:**

a) The majority of infections in adults and children are caused by up to 10 capsular (sero) types
b) The incubation period is defined as 7-10 days
c) Transmission commonly occurs after transient contact with a case
d) Infections are at their peak in the winter months
e) In general infections are trivial but irritating

**2. Pneumococcal polysaccharide vaccine:**

a) Covers about 96% of the serotypes which cause serious infection in the UK
b) Covers 23 serotypes
c) Is highly effective at preventing pneumococcal infections, particularly otitis media
d) Is effective at all ages
e) Post immunisation antibodies wane after about 5 years

**3. Pneumococcal conjugate vaccine (PCV):**

a) In children under 12 months, requires more than one dose to produce effective protection
b) Appears to produce “herd immunity”
c) Contains thiomersal
d) Is available which covers 13 serotypes
e) Is conjugated to a Neisseria meningitidis derived carrier protein

**4. Pneumococcal conjugate vaccine (PCV):**

a) Was introduced to the UK in 2000
b) In the UK primary vaccination schedule is given to children at 2 and 4 months
c) Should be offered routinely as a single dose to anyone over the age of 2 years who has not completed the primary childhood schedule
d) Is given as a reinforcing dose between 12 and 13 months of age in the primary UK schedule
e) An unimmunised or partially immunised child aged between one and under two years of age should have 2 doses of PCV13 two months apart

**5. Pneumococcal polysaccharide vaccine:**

a) Is recommended for everyone aged 65 years and over
b) Has a primary schedule of two doses, given three months apart
c) Boosters should be given to all people in clinical risk groups every five years
d) Should be given to children in high-risk groups above the age of 6 months
e) Is recommended for all patients with asplenia or splenic dysfunction

**6. Which of the following people should receive pneumococcal vaccines:**

a) People with chronic respiratory disease
b) Household contacts of a case of pneumococcal meningitis
c) People who have cerebrospinal fluid leaks
d) Anyone who has developed invasive pneumococcal disease and has not been vaccinated in the past
e) Any child under 2 years of age with an incomplete vaccine history

**7. Which of the following should receive pneumococcal vaccines:**

a) At risk children over 2 years should receive a dose of PPV in addition to their primary PCV doses
b) People with chronic heart disease
c) Diabetics 'controlled by diet'
d) People with cochlear implants
e) People with chronic renal disease

**8. Which of the following should not receive pneumococcal vaccines:**

a) Pregnant women
b) Premature infants
c) HIV positive people
d) Other people with severe immuno-compromising conditions
e) Breast feeding mothers

**9. Pneumococcal polysaccharide vaccines:**

a) Contain purified capsular polysaccharide
b) Do not prevent exacerbation of chronic bronchitis
c) Can provide limited cross protection against non-vaccine serotypes
d) Provide long-lasting immunity i.e. more than 10 years
e) Contain thiomersal

**10. Which of the following is/are recognised adverse reactions to pneumococcal vaccines:**

a) Most patients who receive PPV23 develop some mild fever
b) Systemic reactions occur quite often with both pneumococcal vaccines
c) Headache is common after PPV23
d) Diarrhoea is common in infants and toddlers following PCV
e) Pain and induration at the vaccine site can last for three days following PPV

**11. Which of the following is/are true:**

a) At risk children 12 months to 5 years should also receive one dose of polysaccharide vaccine after the third birthday
b) Where it is not practical to give pneumococcal vaccine at least two weeks before splenectomy immunisation should be delayed at least two months after the operation
c) Children aged between 2 to 5 years who have been fully immunised and then develop splenic dysfunction should be offered an additional dose of PCV
d) 13 valent PCV is routinely recommended for all at risk adults
e) Pneumococcal vaccines are contra indicated in pregnant women

## Chapter 26 – Polio

**1. Infection with polioviruses:**

a) Is most often asymptomatic
b) Children are more likely to have infection without illness than adults
c) Cases are most infectious just before and up to 6 weeks post onset of illness
d) Live vaccine strains may rarely cause paralytic disease
e) The last case of natural polio infection in the UK was in 1954

**2. Oral polio vaccine (OPV):**

a) May protect contacts of vaccinated people
b) Promotes antibody formation in the gut
c) Reduces the frequency of symptomless excretion of wild viruses
d) May cause vaccine associated paralytic polio
e) Is still used for routine vaccination in the UK

**3. Inactivated polio vaccine (IPV):**

a) Is made from two polio virus strains
b) Is available in both intramuscular and oral preparations
c) Should not be used if a vaccination course was started with OPV
d) Is recommended as Td/IPV for those over 10 years
e) Is recommended for some laboratory workers

**4. A 21 year old attends your surgery for travel vaccines. He is backpacking around the world, his itinerary uncertain but includes India, Thailand, Australia and South America. He has had a primary course of diphtheria, tetanus and polio vaccines, but missed his preschool and school leaving booster vaccinations.**

**So far as protection against polio is concerned:**

a) He already has sufficient protection
b) He needs just one dose of Td/IPV to continue his course
c) As he had tetanus vaccine less than 10 years ago the risk of a local reaction means it is unwise to give him Td/IPV
d) He should be given a dose of Td/IPV, and a further dose of Td/IPV in ten years time
e) He should be given OPV as he may be visiting countries where polio is still a problem

## Chapter 27 – Rabies

**1. Which of the following statements is/are true about rabies vaccines:**

a) There are currently two rabies vaccines licensed for use in the UK
b) The vaccines available in the UK are thiomersal free
c) The vaccines are inactivated, do not contain live organisms and cannot cause the disease against which they protect
d) The vaccines should not be used interchangeably to provide protection both pre- or post-exposure
e) They can be stored frozen

**2. Which of the following is/are true? Pre-exposure (prophylactic) immunisation with rabies vaccine should be offered in the UK to:**

a) Laboratory workers handling the virus
b) Those working in DEFRA authorised quarantine premises
c) Those who regularly handle bats
d) Those living in or travelling for more than one month to rabies-enzootic areas
e) Anyone travelling abroad with a dog

**3. Which of the following is/are true about rabies vaccine:**

a) Pre-exposure rabies vaccine should not be given to those who have had a confirmed anaphylactic reaction to a previous dose of rabies vaccine
b) Post exposure vaccine should be given via the intradermal route
c) Pregnant and breast feeding mothers should only receive pre-exposure rabies vaccine if the risk of exposure is high and rapid access to post-exposure prophylaxis is limited
d) There are no absolute contraindications to post-exposure rabies vaccine
e) The vaccine should be given to immunosuppressed and HIV patients regardless of their CD4 count

**4. An immunocompetent previously unimmunised individual at high-risk of rabies (composite rabies risk red) who sustained an exposure yesterday requires the following as post-exposure prophylaxis:**

a) Two doses of rabies vaccine on days 0 and 3
b) Four doses of rabies vaccines on days 0, 3, 7 and 14
c) Five doses of rabies vaccine on days 0, 3 7, 14 and 30
d) Four doses of rabies vaccine on days 0, 3, 7 and 21, plus Hyper-Immune Rabies Immunoglobulin (HRIG) on day 0
e) Two doses of rabies vaccine on days 0 and 3, plus HRIG on day 0

# Chapter 27a – Respiratory Syncytial Virus

**1. Respiratory Syncytial Virus (RSV):**

a) Causes bronchiolitis in infants
b) Has an incubation period varying from 5 to 10 days
c) Has neuraminidase and haemagglutin surface glycoproteins in common with influenza virus
d) May infect individuals repeatedly with the same strain
e) The disease severity is influenced by the virus subtype

**2. Infections with RSV:**

a) Result in hospitalisation of 10% of infected children
b) Commonly peak in the spring in the UK
c) May cause ear infections
d) May increase risk of developing asthma later in childhood
e) Will have occurred in almost all children at least once by the age of 2 years

**3. Palivizumab:**

a) Is a conjugated vaccine
b) Targets the F protein of RSV
c) Provides passive immunisation
d) Requires weekly administration during the RSV season
e) Is indicated for high risk adults as well as children

**4. Palivizumab:**

a) Is given by IM injection
b) Should not be given at the same time as vaccines administered as part of the childhood immunisation programme
c) Should preferably be given in the deltoid region
d) Has a recommended dose of 15 mg/kg of body weight given once a month
e) During the RSV season up to a maximum of 10 doses should be given

**5. During the RSV season Palivizumab should be considered for the following:**

a) Children born at 35 weeks or less and under 1 year of age at the onset of the RSV season
b) Children under 2 years of age with haemodynamically significant congenital heart disease
c) Children under the age of 2 years with asthma who are frequently hospitalised
d) Adults undergoing cardiac surgery at the beginning of the RSV season
e) Children under 2 years of age requiring treatment for bronchopulmonary dysplasia in the previous six months

**6. Children with the following underlying history should be considered for treatment with Palivizumab:**

a) Asplenia
b) Severe combined immunodefiency syndrome (SCID)
c) Requiring long term ventilation
d) Acyanotic chronic heart disease
e) HIV infection

## Chapter 27b - Rotavirus

**1. The following is/are true about rotavirus vaccines:**

a) The 2 licensed rotavirus vaccines Rotarix® and RotaTeq® are not interchangable
b) The vaccine is 95% effective at protecting against rotavirus infection in the first 2 years of life
c) It is an inactivated vaccine
d) The vaccine is not injectable
e) The vaccine may be frozen before use

**2. The ideal recommended schedule for Rotarix® is:**

a) One dose at the 4 month vaccination visit
b) 2 doses at the 2 and 3 month vaccination visits
c) 2 doses at the 3 and 4 month vaccination visits
d) 2 doses at 15 weeks and 24 weeks
e) One dose given any time before 16 weeks

**3. In line with WHO recommendations infants who have not yet received a first dose of rotavirus vaccine should not be commenced on Rotarix® if they are older than:**

a) 10 weeks
b) 12 weeks
c) 24 weeks
d) 20 weeks
e) 15 weeks

**4. Rotarix® is contraindicated in:**

a) Infants under 12 weeks of age
b) Infants with SCID
c) Infants with fructose intolerance
d) Premature infants
e) Infants who are HIV positive

**5. Which of the following is/are true:**

a) There should be an interval of a month between a dose of rotavirus vaccine and BCG
b) Rotavirus and BCG can be given at any time before or after each other
c) If the infant spits out the vaccine up to two replacement doses may be given at the same vaccination visit
d) The vaccine needs to be reconstituted from powder before administration

e) Rotarix® vaccine is supplied as an oral suspension of a cloudy fluid

**6. In relation to intussusception:**

a) The background risk of intussusception peaks in the UK at 12 months of age
b) Intussusception mainly occurs after surgery to the intestine
c) The annual incidence in the UK is 120 cases per 100,000 children
d) Rotarix® should not be given to infants with a previous history of intussusception
e) Rotarix® may be associated with a small risk of intussusception

# Chapter 28 – Rubella

**1. Which of the following is/are true about Rubella:**

a) It is caused by a herpes virus
b) The incubation period is 10-12 days
c) Clinical diagnosis is usually reliable
d) The infectious period is from one week before symptoms to four days after the onset of rash
e) The rash is generally vesicular

**2. Recognised complications of Rubella include:**

a) Arthralgia
b) Parotid swelling
c) Thrombocytopaenia
d) Ulcerative colitis
e) Post–infectious encephalitis

**3. Which of the following is/are true about Congenital Rubella Syndrome (CRS):**

a) Infection in the first 8-10 weeks of pregnancy results in damage in 10% of surviving infants
b) Fetal damage is rare following infection after 16 weeks of pregnancy
c) Is always apparent at birth
d) Has been documented in babies born to women who have inadvertently given MMR vaccine in pregnancy
e) To prevent the risk of CRS in a subsequent pregnancy women who are found to be non-immune in pregnancy should receive MMR vaccine after delivery

**4. Which of the following is/are true about MMR vaccine and Rubella:**

a) Children should not receive MMR vaccine if their mothers are in early pregnancy
b) A mild rubella like rash may be seen 2-3 weeks after a dose of MMR vaccine
c) Arthralgia, probably due to the rubella component, is a reported rare occurrence after MMR.
d) ITP following MMR is more likely to be due to measles than the rubella component
e) Small amounts of rubella vaccine virus have been found in breast milk but this is not harmful to the baby nor a contra-indication to MMR immunisation whilst breast-feeding

**5. Which of the following is/are true about MMR vaccine and Rubella:**

a) MMR vaccine may occasionally provide effective post exposure prophylaxis following contact with rubella
b) MMR vaccine should not be given if there is any likelihood a person is already incubating rubella
c) Termination of pregnancy should not be recommended following inadvertent administration of MMR to a pregnant woman
d) Where rubella non-immune women have received anti-D immunoglobulin post partum the dose of MMR vaccine should be deferred.
e) A blood transfusion around the time of delivery may affect the response to MMR vaccine given post partum

**6. Which of the following is/are true:**

a) The selective vaccination policy of offering single dose rubella vaccination to teenage girls in the UK ceased in 1999
b) A single dose of rubella – containing vaccine confers around 85-90% protection against rubella
c) Satisfactory evidence of rubella protection includes documentation of a positive antibody result for rubella or having received one dose of rubella containing vaccine or MMR.
d) Human normal immunoglobulin (HNIG) is not recommended for post-exposure protection against rubella
e) The diagnosis of rubella con be confirmed non-invasively by testing for specific IgM in oral fluid (saliva)

## Chapter 28a - Shingles

**1. The following is/are true about shingles:**

a) The estimated lifetime risk of acquiring shingles is about one in four
b) It can be acquired from another individual who has chicken pox
c) The rash typically lasts between two to four weeks
d) Ophthalmic zoster occurs in about 4% of cases
e) Individuals with active lesions can transmit VZV to susceptible individuals to cause chicken pox

**2. The following is/are true:**

a) The accepted definition of Post Herpetic Neuralgia (PHN) is pain that persists for 60 days after the onset of rash
b) The risk of Post Herpetic Neuralgia (PHN) decreases after the age of 79
c) Giving Zostavax to a person with symptoms of Post Herpetic Neuralgia (PHN) may offer some therapeutic benefit
d) “Herpes zoster ophthalmicus” may result in glaucoma
e) Most deaths linked to dissemination of reactivated varicella virus are attributable to encephalitis

**3. The following is/are true about Zostavax:**

a) It contains a strain of varicella zoster virus at significantly higher dose than the Varivax varicella vaccine
b) It reduces the incidence of shingles in those aged 60 and 70 by over 70%
c) It can be administered simultaneously with oral antiviral agents
d) It can be administered at the same time as inactivated influenza vaccine
e) It should not be administered at the same time as 23 valent pneumococcal vaccine as it gives an inferior VZV antibody response

**4. The course of Zostavax consists of:**

a) A single dose
b) 2 doses one month apart
c) 3 doses one month apart
d) A single dose with a booster dose one year later
e) A single dose with a booster dose three years later

**5. The administration route for Zostavax is:**

a) Intradermal
b) Subcutaneous
c) Intramuscular
d) Intravascular
e) Intranasal

**6. Zostavax should not be administered to:**

a) Patients with a previous history of shingles over a year ago
b) Patients without a previous history of chicken pox
c) Patients with symptoms of Post Herpetic Neuralgia (PHN)
d) Patients using topical acyclovir
e) Patients with symptoms of shingles

**7. Reported adverse reactions to Zostavax include:**

a) Headache
b) Pruritis
c) Fever
d) Idiopathic Thrombocytopaenic purpura (ITP)
e) Myalgia

**8. Contraindications to receiving Zostavax include:**

a) Lymphoma
b) Parkinson's Disease
c) Macular degeneration
d) Inhaled corticosteroids
e) Previous anaphylactic reaction to gelatin

## Chapter 29 - Smallpox

**1. Which of the following is/are true regarding smallpox and smallpox vaccination:**

a) The world was declared smallpox free in December 1979
b) Members of smallpox response teams should be vaccinated against smallpox
c) Staff working in laboratories with monkey pox should be considered for vaccination against smallpox
d) People opening crypts where smallpox cases may have been buried should be vaccinated against smallpox
e) Smallpox vaccine can be given safely to anyone

# Chapter 30 – Tetanus

**1. The disease tetanus:**

a) Is caused by the action of tetanus toxin
b) Is unlikely in unvaccinated individuals in the UK as there is herd immunity
c) Can never be eradicated as the spores are common in the environment
d) Following a national vaccination programme almost disappeared in adults over 65 in the UK by the 1970s
e) Injecting drug use is a risk factor

**2. Tetanus vaccine:**

a) Is a live attenuated vaccine
b) Contains adjuvant
c) Is available as a single antigen vaccine in the UK
d) Should not given with MMR vaccine
e) 5 doses provide long term protection

**3. Tetanus containing vaccines should not be given if:**

a) There has been a confirmed anaphylactic reaction to a previous dose of a tetanus containing vaccine
b) There has been a confirmed anaphylactic reaction to neomycin, streptomycin or polymyxin B
c) There has been a severe reaction to a previous vaccination including persistent crying or screaming for more than 3 hour
d) There has been a severe local reaction including swelling of the whole circumference of the arm
e) The intended recipient is a breast feeding woman

**4. A tetanus prone wound would include one:**

a) Which requires surgery that is delayed for more than 6 hours
b) Which has a lot of devitalised tissue
c) Where there is a puncture wound contaminated with soil
d) Where is a foreign body
e) Where is a deep cut from a clean kitchen knife

**5. A child aged 10 who has received a total of three doses of tetanus vaccine sustains a high-risk tetanus prone wound. They require:**

a) Two reinforcing doses of vaccine
b) One reinforcing dose of vaccine
c) One reinforcing dose of vaccines, and one dose of Human tetanus Immunoglobulin
d) No further doses of vaccine, but one dose of Human tetanus Immunoglobulin
e) None of the above

# Chapter 31 – Tick borne Encephalitis (TBE)

**1. Which of the following is/are true about TBE vaccine:**

a) It is supplied as a suspension of 0.5ml injection in pre-filed syringe
b) It is inactivated
c) It is thiomersal tree
d) It is effective against both European and Far East subtypes
e) It can cause the disease

**2. Which of the following is/are true about TBE vaccine:**

a) It is recommended for the protection of individuals at high risk of exposure to the virus through travel or employment
b) It is recommended particularly for spring and summer travel in warm, forested and endemic areas, where ticks are most prevalent
c) The schedule consists of 2 doses separated by 6 months
d) It can be given at the same time as other travel and routine vaccines
e) There is a TBE immunoglobulin available in the UK in addition to the vaccine

# Chapter 32 – Tuberculosis

**1. Which of the following is/are true about tuberculosis:**

a) Human tuberculosis is caused by infection with *Mycobacterium tuberculosis* complex bacteria
b) Most cases in the UK are acquired by the non-respiratory route
c) Transmission is less likely when bacilli can be seen in the sputum of the index case on microscopy
d) Patients with weakened immune systems can reactivate latent TB infection
e) In the UK there are around 650 deaths a year either due to or associated with TB

**2. In the UK BCG immunisation is recommended for:**

a) All school children aged 11-13 years
b) Newborns with parents from countries of high TB prevalence
c) Newborns with grandparents from countries with high TB prevalence
d) Children with asthma
e) Any adult who requests it under the age of 35

**3. Which of the following is/are true about BCG immunisation:**

a) It is a live attenuated vaccine
b) It contains a strain derived from *M. tuberculosis*
c) Protection has been shown to last for 30-40 years
d) It is 70-80% effective against pulmonary disease
e) Unused reconstituted vaccine should be discarded after 24 hours

**4. A tuberculin skin test prior to BCG immunisation is necessary for:**

a) All individuals aged 5 years and over
b) All children under 6 years who have had a history of residence in a country with a high TB incidence
c) A close contact of a person with TB
d) Those with any family history of TB within the last 5 years
e) A baby aged 6 weeks old who missed their neonatal BCG on the hospital ward

**5. Which of the following is/are true about BCG immunisation:**

a) It must be administered subcutaneously
b) It is normally given in to the lateral aspect of the arm at the level of the insertion of the deltoid muscle
c) The correct dose for children is 0.5 ml
d) The injection should be given with the needle bevel downwards
e) A 23G short bevelled needle should be used

**6. Which of the following is/are true:**

a) If BCG is administered again to an individual who has received it previously there is a risk of an adverse reaction
b) The absence of a characteristic BCG scar is reliable evidence that BCG has not been given previously
c) The BCG immunisation site should be covered with an occlusive dressing
d) Induration at the injection site is a usual reaction to a successful BCG immunisation
e) The enlargement of a regional lymph node to less than 1cm is a sign of an adverse reaction

**7. Which of the following is/are true about tuberculin skin testing:**

a) The standard test used in the UK is the Mantoux test
b) The preparation for routine use contains 2TU/0.1 ml tuberculin PPD
c) It should normally be administered subcutaneously on the flexor surface of the left forearm
d) The results should be read between 4-7 days later
e) It should not be carried out within 4 weeks of having received a live vaccine

**8. Which of the following is/are true about tuberculin skin testing:**

a) The result of the tuberculin test can be suppressed by glandular fever
b) If a second tuberculin test is necessary it can be administered on the same arm
c) A diameter of induration of less than 5mm is considered to be a negative Mantoux test result
d) The results should be read 24-48 hours later
e) The area of erythema is relevant in assessing the diameter of the induration

## Chapter 33 – Typhoid

**1. Typhoid fever:**

a) With paratyphoid fever are notifiable diseases covered by the term "enteric fever"
b) Is caused by members of the genus Salmonella
c) Has an incubation period of 1-3 weeks
d) Is transmitted via the faeco-oral route but may also be transmitted via urine in acute and chronic cases
e) Case fatality may be as high as 20% with prompt antibiotic therapy

**2. Typhoid is:**

a) Associated with long-term carriage of the organism in 10% of cases
b) Endemic to the UK
c) Only associated with previous foreign travel in the UK
d) Predominantly a disease of foreign countries with poor sanitation
e) Endemic in resource rich countries

**3. Which of the following vaccines against typhoid is/are used in the UK:**

a) Polysaccharide Vi vaccine
b) Whole cell typhoid vaccine
c) Oral Ty21a vaccine
d) Combined polysaccharide Vi and hepatitis A vaccine
e) All of the above

**4. Which of the following statements is/are true about typhoid polysaccharide containing vaccines:**

a) They can be given to anyone over the age of 18 months
b) A single dose is adequate to provide protection
c) Protection lasts 5 years
d) Booster doses should be given to those at continued risk of infection every 3 years
e) Children between 12-18 months may be immunised if the risk of contracting typhoid is considered to be high

**5. Which of the following statements is/are true regarding Oral Ty21a vaccine:**

a) It can be given to anyone over the age of 18 months
b) Has a primary schedule of three doses, given at 0, 2 and 4 days
c) Capsules can be taken with food
d) Protection commences about 7- 10 days after completing the primary course
e) A single booster dose should be administered to those at continuing risk of infection

**6. Which of the following people should be considered for typhoid vaccines:**

a) Travellers to South East India
b) Travellers to Southern Switzerland
c) Travellers to South America
d) Travellers to South Asia
e) Travellers to the Middle East

**7. Which of the following should be considered for typhoid vaccines:**

a) Travellers to Central America
b) Travellers to Africa
c) Laboratory staff who may handle *Salmonella typhi*
d) Close contacts of cases and chronic carriers
e) People exposed during an outbreak

**8. Which of the following should not receive polysaccharide Vi vaccines:**

a) Pregnant women
b) Breast feeding mothers
c) People with a documented anaphylactic reaction to a previous dose
d) HIV positive people
e) Other people with severe immunosuppression

**9. Adverse reactions to polysaccharide Vi vaccines include:**

a) Pain at the injection site
b) Fever
c) Abdominal pain
d) Diarrhoea
e) Rash

**10. Which of the following should not receive Oral Ty21a vaccines:**

a) Those taking antibiotics
b) Those with a febrile illness
c) HIV positive people
d) People with severe immunosuppression
e) People with an acute gastro-intestinal illness at the time of vaccination

**11. Adverse reactions to Oral Ty21a vaccine include:**

a) Urticaria
b) Headache
c) Fever
d) Gastro-intestinal upset
e) Flu like illness

**12. Which of the following statements is/are true regarding Oral Ty21a vaccine:**

a) Vaccination should be delayed until 3 days after completing a course of antibiotics
b) Mefloquine can be taken at the same time as Ty21a vaccine
c) Antibiotics can be prescribed immediately after completion of a primary course
d) The fixed combination antimalarial, atovaquone and proguanil can be taken at the same time as Ty21a
e) Other antimalarials can be taken at the same time as Ty21a

## Chapter 34 – Varicella

**1. Which of the following is/are true about Varicella (chickenpox):**

a) It is usually acquired from other people with chickenpox
b) It may be acquired from people with shingles
c) It has a secondary infection rate of up to 90% in household contacts
d) Smoking is not a risk factor for severe disease
e) Pregnant women appear to be at greatest risk of severe disease late in the second or early in the third trimester

**2. The risk to the foetus if the mother develops chickenpox in pregnancy:**

a) Is 10% for congenital varicella syndrome up to 12 weeks
b) Is of herpes zoster in the second and third trimesters
c) At 7 days before to 7 days after delivery is of severe, possibly fatal disease in the neonate
d) Is substantially lower of congenital varicella syndrome after 20 weeks of pregnancy
e) Can be reduced by administration of varicella vaccine at any stage of pregnancy

**3. Varicella vaccines:**

a) Are live attenuated vaccines
b) Do not contain thiomersal
c) Carry a high risk of transmission of chickenpox to close contacts of vaccinees
d) Provide 90% protection against clinical chickenpox in adults a two dose schedule
e) Provide 98% protection against clinical chickenpox in children with a two dose schedule

**4. Varicella zoster immunoglobulin:**

a) Is prepared from pooled plasma from UK donors
b) Is limited in supply
c) Is recommended for those in a risk group with significant exposure even if they have detectable varicella zoster antibodies
d) Is recommended for at risk persons in contact with immunocompetent individuals with ophthalmic shingles
e) Is recommended for at risk persons exposed up to 5 days before the appearance of the chickenpox rash

**5. Which of the following is/are included in the definition of a significant exposure to varicella zoster virus:**

a) Exposure to chickenpox
b) Exposure to immunosuppressed patients with localised zoster
c) Exposure up to 72 hours before the onset of a chickenpox rash
d) Exposure on the day of occurrence of shingles affecting the eye
e) Contact in the same room for 2 minutes

**6. In neonates VZIG is recommended for:**

a) Those whose mothers develop chickenpox the day after delivery
b) Those whose mothers develop chickenpox 10 days before delivery
c) Infants whose mothers do not have VZ antibodies and are exposed to a sibling with chickenpox at 1 month of age
d) VZ antibody negative infants born at 27 weeks in neonatal intensive who are exposed to a healthcare worker with chickenpox
e) VZ antibody negative infants 70 days old in neonatal intensive exposed to a healthcare worker with chickenpox

**7. Which of the following is/are true about Varicella Zoster Immune Globulin (VZIG) prophylaxis:**

a) It always prevents severe chickenpox
b) It can significantly increase VZ antibody titres in immunocompromised contacts who are already antibody positive
c) It may not prevent subclinical disease
d) It always prevents congenital varicella
e) Patients given it should be offered aciclovir if chickenpox develops

**8. Varicella vaccine should not be given to:**

a) Immunosuppressed patients
b) Pregnant women
c) Those with a confirmed anaphylactic reaction to neomycin or gelatine
d) Women who are breast feeding
e) Non-immune contacts within 3 days of exposure

## Chapter 35 – Yellow Fever

**1. Which of the following is/are true about Yellow fever vaccine:**

a) It is a live attenuated vaccine containing live strain (17D) of the virus
b) It can be given at any time relationship to other live and inactivated vaccines although an interval of 28 days is recommended in the case of MMR vaccine
c) A single dose confers immunity in 95–100% of recipients (if administered correctly)
d) Immunity persists for no more than 5 years
e) The risk of neurological and viscerotropic adverse events decreases with age

**2. Yellow fever vaccine should be given:**

a) At least 5 days prior to travel to an endemic area
b) To laboratory workers handling infected materials
c) To persons who are travelling to countries that require International Certificate of Vaccination or Prophylaxis(ICVP) for entry
d) To persons who are travelling to an endemic area even if the country does not require a certificate
e) As a single dose with a booster dose at 6 months

**3. Which of the following is/are true? Yellow fever vaccine should not be given to those:**

a) Over 60 years of age
b) Under 6 months of age
c) Who have a thymus disorder
d) Who have had a confirmed anaphylactic reaction to a previous dose, any components of the vaccine and egg
e) Who are considered immunocompromised due to a congenital condition disease process

**Notes:**

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**Questions/comments:**

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Issued by Drs Amelia Cummins, David Irwin, Sally Millership and Sultan Salimee, Consultants in Communicable Disease Control

Health Protection Team
Second Floor
Goodman House
Station Approach
Harlow
Essex
CM20 2ET

Tel: 0300 303 8537

Fax: 0300 303 8541

Contact us at:

**EastofEnglandHPT@phe.gov.uk**

Website: www.gov.uk/phe