Infectio®
A quarterly Magazine
9th edition December 2018

Current News

How does infection with Naegleria fowleri occur

Naegleria fowleri infects people when water containing amoeba enters the body through the nose. This typically occurs when people go for swimming or diving in warm freshwater places, like lakes and rivers. The Naegleria fowleri travels up the nose to the brain where it destroys the brain tissue.

By drinking contaminated water, the person cannot get infected. In very rare instances, Naegleria infections may also occur when contaminated water from other sources (such as inadequately chlorinated swimming pool water or contaminated tap water) enters the nose, for e.g. when people submerge their heads or cleanse their noses during religious practices, and when people irrigate their sinuses (nose) using contaminated tap water. Naegleria fowleri has not been shown to spread via water vapor or aerosol droplets (such as shower mist or vapor from a humidifier).

Source:
https://www.cdc.gov/parasites/naegleria/general

Infectio®
A quarterly Magazine

Editorial Correspondence
Dr. Muhammad Salman
Email: infectio@samikhi.com

Introduction

SAMI Pharmaceuticals (Pvt.) Ltd. is an established pharmaceutical concern involved in manufacturing of variety of formulations catering major therapeutic areas.

We, at SAMI Pharmaceuticals (Pvt.) Ltd., have a strong commitment towards humanity for delivering quality products at affordable prices & to continuously improve the effectiveness of Quality Management System.

We have a firm belief,
"Quality reflected in the finished products has to be created from the very start."

We constantly plan, implement, monitor and review the steps and procedures to improve on the quality of our materials, processes, equipments and human resources.

Our products comply with the high standards required by the authorities, institutions and even more importantly by OURSELVES. We have technical collaboration and licensing arrangement with the renowned European Pharmaceutical Manufacturers.

Disclosure Statement

SAMI Pharmaceuticals (Pvt.) Ltd. are the sponsors of content of "*Infectio*®magazine" which is for educational purposes only. As sponsor, M/s SAMI Pharmaceuticals have no influence over or input on the scope, content or direction of the editorial material. Any opinion, view or idea expressed in any article, review or any content contributed or published is the author's own & does not reflect the views of SAMI Pharmaceuticals or its employees, officers, directors, professional advisors, affiliated and related entities, its partners, sponsors, advertisers or content providers (collectively referred to as "SAMI Pharmaceuticals Parties").

It should be noted that no SAMI Pharmaceuticals Parties shall be liable to any person or entity whomsoever for any loss, damage, injury, liability, claim or any other cause of action of any kind arising from the use, dissemination of or reliance on any materials and/or other contents provided in this Magazine.

Welcome Aboard

Infectio®

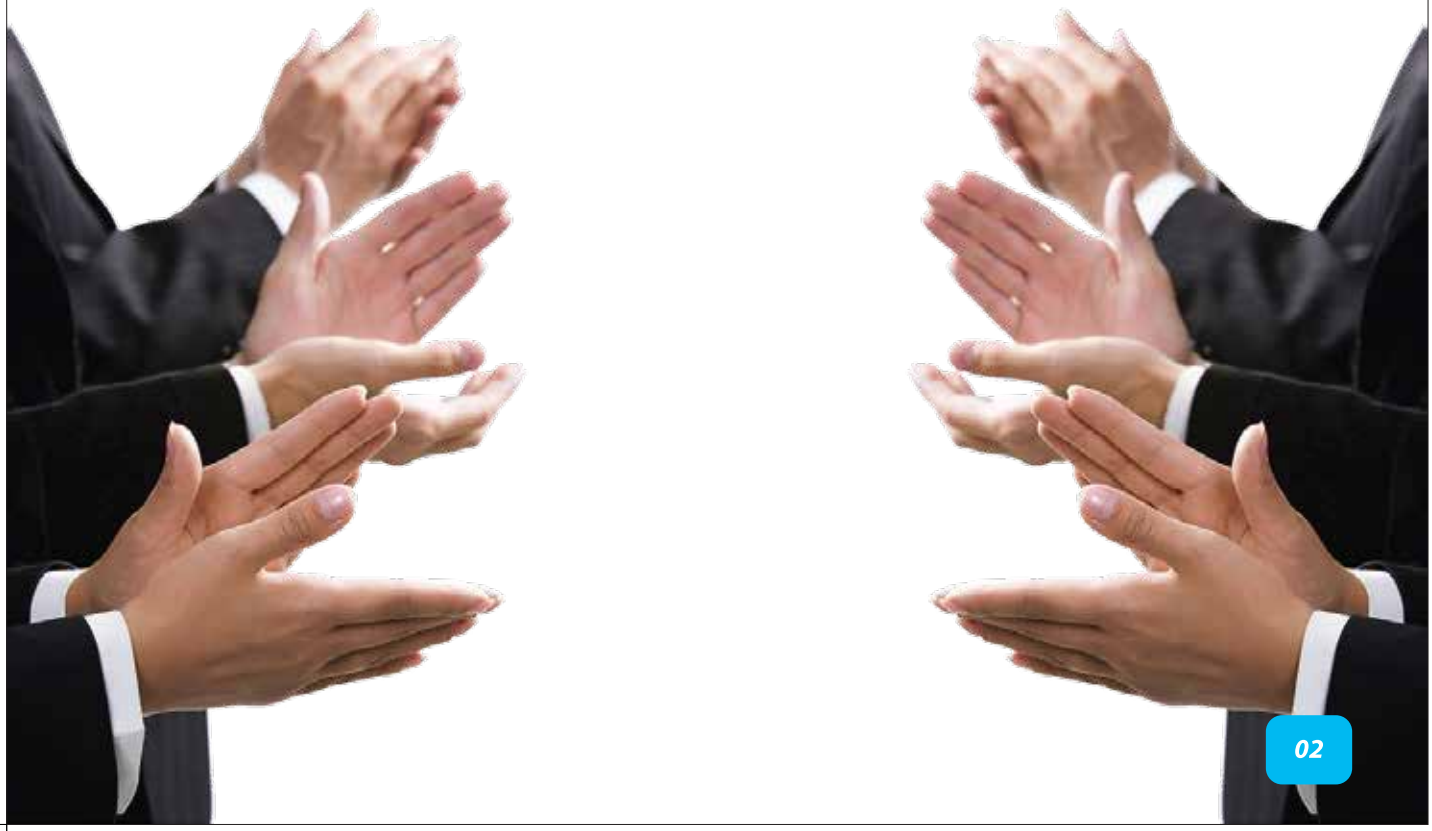
We feel honored to welcome two new board members to our valued Infectio® team:

Prof. Waris Qidwai
Dr. M. N. Lal

Prof. Waris Qidwai is the Professor and Ex-HOD in the department of Family Medicine at Aga Khan University Hospital. He is affiliated with different academic association & societies like Indian Academy for family Physicians, Pakistan Hypertension League and also acted as a Chairman in the working Party on research of World Organizations of Family doctors. He had also represented as Chairman in International Federation of Primary Care Research networks. His areas of interest are Primary Health Care, Geriatrics, Health systems and Person-centered care.

Dr. M N Lal is a qualified Pediatrician and did MD in Pediatrics. He worked at different academic positions in Dow & Civil hospital Karachi. He involved in research publications and participated as a speaker in both national and international conferences. He also worked for UNICEF/WHO/MCHIP as a focal person and facilitator for IMNCI & GAPPD program in collaboration with government of SINDH, UNICEF and USAID Pakistan. Currently he is working as Director of Child survival program Sindh.

We truly appreciate to have both Professionals in our team. We believe in their skills, talent and knowledge that can be utilized for our magazine's improvement. Through their understanding & experience, we will be able to fulfil our vision of delivering the structured information for the aspiring primary care physicians and healthcare professionals of Pakistan.



Message of the Chairman Infectio®

Infectio®

The previous edition was memorial for the infectious diseases in Pakistan. A new wave of diseases gripped the country, and while many individuals were treated, a lot of work still remains to be done. Infectio® was conceived out of essential to help the healthcare professionals to be on pace with the advances in the area of infectious diseases. There is a competent team behind the mission of the magazine, is on the right pathway near supporting the maximum number of medical professionals.

For 2019, we are looking forward to collaborate with WHO and develop a magazine on recent updates in IMNCI guidelines. With their support we will distribute information that will help the doctors in management of childhood illness at its best. Being a responsible healthcare professional, it's our prime duty to prescribe the right products for the diseases. Therefore, we will publish articles on the use of antibiotics and their significance on misuse. Moreover, we are working on special edition on Gastro-intestinal diseases, which is in line with the objective to minimize the increase in GI related infections.

The current issue includes Cholera, as well as underlines the need for adult immunization program. Research on infectious diseases remains ignored by major pharmaceuticals, which can become a core problem in the future. Important articles on Extensively Drug-Resistant Typhoid Fever in Pakistan & High levels of antibiotics resistance found worldwide are also highlighted in this issue.

We are grateful to unconditional support from SAMI Pharmaceuticals for their endless efforts to collaborate with the medical professionals and for the support to medical community. I would also like to appreciate the determination of the editorial board and the contributors of this edition of Infectio® Magazine. In the end, I would like to congratulate the winners of previous issue and acknowledge the importance and determination of all quiz contestants.

.

Thank you

Prof. Dr. Ejaz Ahmed Vohra
Chairman Editorial Board
Dean Post graduate (Clinical)
Head, Department of Medicine
Dr. Ziauddin University Karachi

Antibiotic Resistance Worldwide

Summarized by: Prof. Ejaz Vohra

WHO's first release of surveillance data on antibiotic resistance reveals high levels of resistance to a number of serious bacterial infections in both high- and low-income countries. WHO's new Global Antimicrobial Surveillance System (GLASS) reveals widespread occurrence of antibiotic resistance among 500,000 people with suspected bacterial infections across 22 countries.

The most commonly reported resistant bacteria were ***Escherichia coli, Klebsiella pneumoniae, Staphylococcus aureus, and Streptococcus pneumoniae,*** followed by Salmonella spp. The system does not include data on resistance of Mycobacterium tuberculosis, which causes tuberculosis (TB), as WHO has been tracking it since 1994 and providing annual updates in the ***Global tuberculosis report.***

Among patients with suspected bloodstream infection, the proportion that had bacteria resistant to at least one of the most commonly used antibiotics ranged tremendously between different countries – from zero to 82%. Resistance to penicillin – the medicine used for decades worldwide to treat pneumonia – ranged from zero to 51% among reporting countries. And between 8% to 65% of E. coli associated with urinary tract infections presented resistance to ciprofloxacin, an antibiotic commonly used to treat this condition.

52 countries (25 high-income, 20 middle-income and 7 low-income countries) are enrolled in WHO's Global Antimicrobial Surveillance System. For the first report, 40 countries provided information about their national surveillance systems and 22 countries also provided data on levels of antibiotic resistance.

Data presented in this first GLASS report vary widely in quality and completeness. Some countries face major challenges in building their national surveillance systems, including a lack of personnel, funds and infrastructure.

However, WHO is supporting more countries to set up national antimicrobial resistance surveillance systems that can produce reliable, meaningful data. GLASS is helping to standardize the way that countries collect data and enable a more complete picture about antimicrobial resistance patterns and trends.

Solid drug resistance surveillance programs in TB, HIV and malaria have been functioning for many years and have helped estimate disease burden, plan diagnostic and treatment services, monitor the effectiveness of control interventions, and design effective treatment regimens to address and prevent future resistance. GLASS is expected to perform a similar function for common bacterial pathogens.

The rollout of GLASS is already making a difference in many countries. For example, Kenya has enhanced the development of its national antimicrobial resistance system; Tunisia started to aggregate data on antimicrobial resistance at national level; the Republic of Korea completely revised its national surveillance system to align with the GLASS methodology, providing data of very high quality and completeness; and countries such as Afghanistan or Cambodia that face major structural challenges have enrolled in the system and are using the GLASS framework as an opportunity for strengthening their AMR surveillance capacities. In general, national participation in GLASS is seen as a sign of growing political commitment to support global efforts to control antimicrobial resistance.

Viruses or Bacteria
What's got you sick?

Antibiotics are only needed for treating certain infections caused by bacteria. Viral illnesses cannot be treated with antibiotics. When an antibiotic is not prescribed, ask your healthcare professional for tips on how to relieve symptoms and feel better.

Common Condition	Common Cause			Are Antibiotics Needed?
	Bacteria	Bacteria or Virus	Virus	
Strep throat	✓			Yes
Whooping cough	✓			Yes
Urinary tract infection	✓			Yes
Sinus infection		✓		May be
Middle ear infection		✓		May be
Bronchitis/chest cold (in otherwise healthy children and adults)*		✓		No*
Common cold/runny nose			✓	No
Sore throat (except strep)			✓	No
Flu			✓	No

* Studies show that in otherwise healthy children and adults, antibiotics for bronchitis won't help you feel better.

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Courtesy:

CDC

Extensively Drug-Resistant Typhoid Fever in Pakistan

Prof. Abdul Gaffar Billoo (Sitar-e-Imtiaz)
The Aga Khan University Hospital Karachi

Infectio®

Typhoid Fever

Disease caused by the bacterium Salmonella Typhi that is spread by contaminated food and water. Symptoms of typhoid fever often include high fever, weakness, stomach pain, headache, cough, and loss of appetite. Some people have diarrhea or constipation. In rare cases, typhoid fever can be fatal. Treatment with antibiotics is essential. Vaccination helps to protect people from getting typhoid fever.

Key Points

- There is an ongoing outbreak of extensively drug-resistant (XDR) typhoid fever in Pakistan that does not respond to most antibiotics.
- All travelers to Pakistan are at risk of getting XDR typhoid fever. Those who are visiting friends or relatives are at higher risk than are tourists and business travelers.
- Travelers to South Asia, including Pakistan, should take precautions to protect themselves from typhoid fever, including getting a typhoid fever vaccination.
- Travelers to these areas should also take extra care to follow safe food and water guidelines.

Current Scenario

Health officials in Pakistan have reported an ongoing outbreak of XDR typhoid fever that began in Hyderabad in November 2016. The strain of Salmonella Typhi does not respond to most antibiotics used to treat typhoid fever. The outbreak has spread to the city of Karachi and to multiple districts, and several deaths have been reported.

Public health authorities in Pakistan are identifying possible typhoid fever cases, starting typhoid vaccination campaigns in the most affected districts, and spreading educational messages about proper hand washing and safe food and water practices.

Practice safe eating and drinking habits

Because the bacteria that cause typhoid fever are spread through contaminated food and water, you can reduce your risk of infection in several ways:

- Follow safe food and water guidelines.
- Wash your hands often, especially before eating.
- Avoid eating food prepared by anyone who is sick or has recently been sick

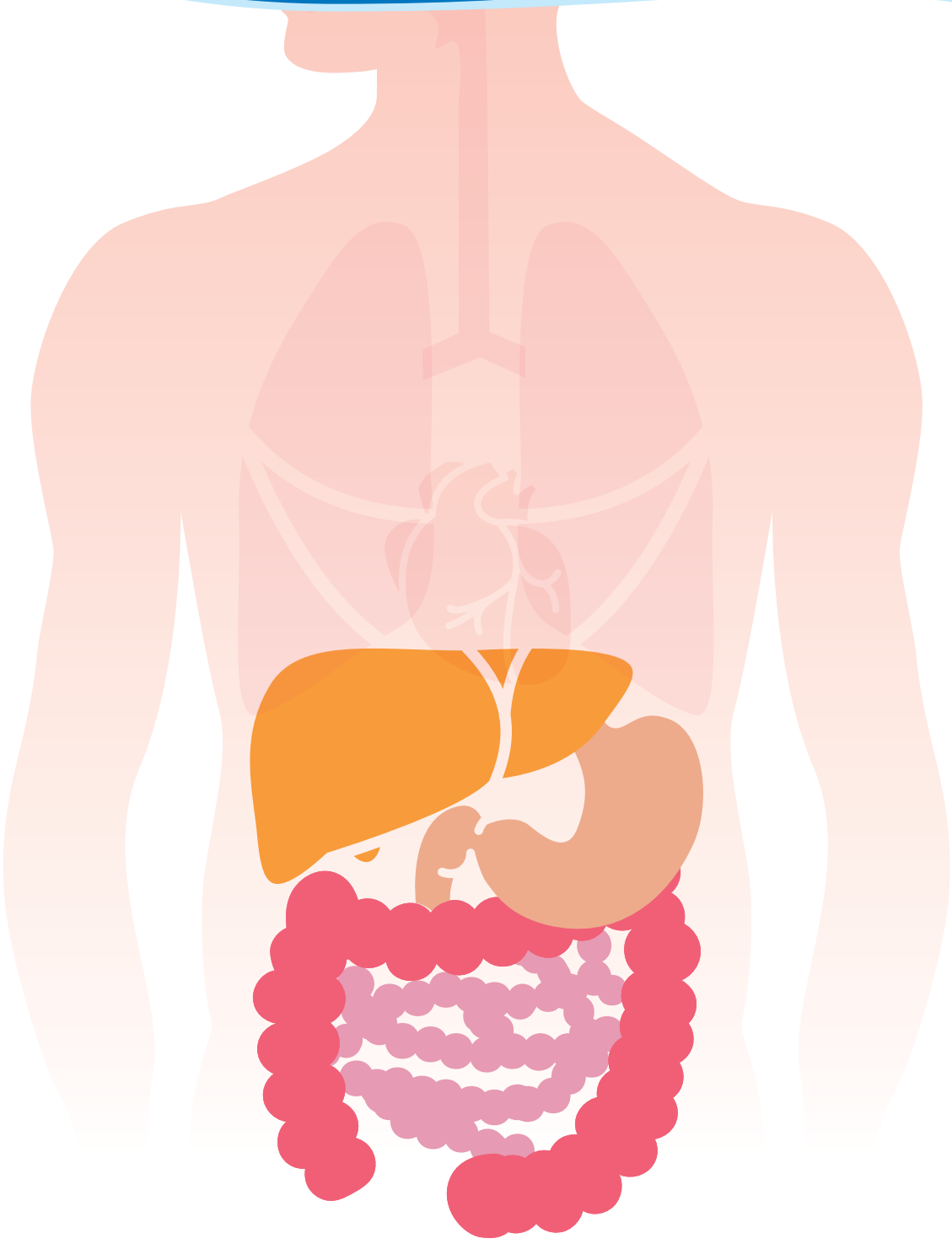
Information for Health Care Professionals

The XDR strain of Salmonella Typhi is resistant to most antibiotics (ampicillin, chloramphenicol, trimethoprim-sulfamethoxazole, ciprofloxacin, and ceftriaxone) used to treat typhoid fever. Health care providers should:

- Obtain a complete travel history (asking about travel to South Asia, including Pakistan) from patients with suspected typhoid fever.
- Collect stool and blood cultures from patients with suspected typhoid fever and request antimicrobial susceptibility testing on isolates.
- Be aware that the Pakistan outbreak strain remains susceptible to azithromycin and carbapenems. Azithromycin is effective for uncomplicated (diarrhea or bacteremia without secondary complications) typhoid fever and should be used to treat patients with suspected uncomplicated typhoid fever who have traveled to Pakistan. When culture and sensitivity results are available, adjust treatment accordingly. Adult azithromycin dosage is usually 1,000 mg orally once then 500 mg orally daily OR 1,000 mg orally once daily for at least 5–7 days. Pediatric azithromycin dose is 20 mg/kg orally once then 10–20 mg/kg orally once per day (maximum 1,000 mg per day) for at least 5–7 days.
- Carbapenems should be used for patients with suspected severe or complicated typhoid fever who have traveled to Pakistan. Severe or complicated typhoid fever would include, but not be limited to patients with gastrointestinal complications (such as typhoid-related intestinal perforation, peritonitis, intestinal hemorrhage, hepatitis) neurologic complications (such as typhoid encephalopathy, including altered consciousness, delirium, confusion) or bacteremia with sepsis or shock. When culture and sensitivity results are available, adjust treatment accordingly. Consider getting an infectious diseases consultation for these patients.
- Be aware that relapses can occur often 1–3 weeks after clinical improvement.
- Be aware that most (90%) Salmonella Typhi isolates from patients coming from South Asia have decreased susceptibility or resistance to fluoro-quinolones, including ciprofloxacin; therefore fluoro-quinolones should not be used as empiric treatment for suspected typhoid fever in patients who have traveled to this area.
- Report all cases of confirmed typhoid fever to the appropriate local or state health departments.

GUESS WHAT!

Infectio®



Diseases Conveyed by Ingestion: Cholera

Prof. Abdul Gaffar Billoo (Sitar-e-Imtiaz)
The Aga Khan University Hospital Karachi

Infectio®

Key facts

- Cholera is an acute diarrhoeal disease that can kill within hours if left untreated.
- There are an estimated 3–5 million cholera cases and 100,000–120,000 deaths due to cholera every year.
- Up to 80% of cases can be successfully treated with oral rehydration salts.
- Effective control measures rely on prevention, preparedness and response.
- Provision of safe water and sanitation is critical in reducing the impact of cholera and other waterborne diseases.
- Oral cholera vaccines are considered an additional means to control cholera, but should not replace conventional control measures.

INTRODUCTION

It is an acute diarrheal infection caused by ingestion of food or water contaminated with the bacterium Vibrio cholerae. Every year, estimated 3–5 million cholera cases are reported and around 100,000–120,000 deaths due to cholera. The short incubation period of two hours to five days, enhances the potentially explosive pattern of outbreaks.

History

During the 19th century, cholera spread across the world from its original reservoir in the Ganges delta in India. Six subsequent pandemics killed millions of people across all continents. The current (seventh) pandemic started in South Asia in 1961, and reached Africa in 1971 and the America in 1991. Cholera is now endemic in many countries.

Vibrio cholerae strains

Two serogroups of V. cholerae – O1 and O139 – cause outbreaks. V. cholerae O1 causes the majority of outbreaks, while O139 – first identified in Bangladesh in 1992 – is confined to South-East Asia.

Non-O1 and non-O139 V. cholerae can cause mild diarrhoea but do not generate epidemics.

Recently, new variant strains have been detected in several parts of Asia and Africa. Observations suggest that these strains cause more severe cholera with higher case fatality rates. Careful epidemiological monitoring of circulating strains is recommended.

The main reservoirs of V. cholerae are people and aquatic sources such as brackish water and estuaries, often associated with algal blooms. Recent studies indicate that global warming creates a favorable environment for the bacteria

Risk factors and disease burden

Cholera transmission is closely linked to inadequate environmental management. Typical at-risk areas include peri-urban slums, where basic infrastructure is not available, as well as camps for internally displaced people or refugees, where minimum requirements of clean water and sanitation are not met.

The consequences of a disaster – such as disruption of water and sanitation systems, or the displacement of populations to inadequate and overcrowded camps – can increase the risk of cholera transmission should the bacteria be present or introduced. Epidemics have never arisen from dead bodies.

Cholera remains a global threat to public health and a key indicator of lack of social development. Recently, the re-emergence of cholera has been noted in parallel with the ever-increasing size of vulnerable populations living in unsanitary conditions.

The number of cholera cases reported to WHO continues to rise. For 2011 alone, a total of 589,854 cases were notified from 58 countries, including 7816 deaths. Many more cases were unaccounted for due to limitations in surveillance systems and fear of trade and travel sanctions. The true burden of the disease is estimated to be 3–5 million cases and 100,000–120,000 deaths annually.

CLINICAL FEATURES

Cholera is an extremely virulent disease. It affects both children and adults and can kill within hours.

About 75% of people infected with V. cholerae do not develop any symptoms, although the bacteria are present in their faeces for 7–14 days after infection and are shed back into the environment, potentially infecting other people.

Among people who develop symptoms, 80% have mild or moderate symptoms, while around 20% develop acute watery diarrhoea with severe dehydration. This can lead to death if untreated.

People with low immunity – such as malnourished children

or people living with HIV – are at a greater risk of death if infected.

Treatment

Cholera is an easily treatable disease. Up to 80% of people can be treated successfully through prompt administration of oral rehydration salts (WHO/UNICEF ORS standard sachet). Very severely dehydrated patients require administration of intravenous fluids. Such patients also require appropriate antibiotics to diminish the duration of diarrhoea, reduce the volume of rehydration fluids needed, and shorten the duration of V. cholerae excretion. Mass administration of antibiotics is not recommended, as it has no effect on the spread of cholera and contributes to increasing antimicrobial resistance.

In order to ensure timely access to treatment, cholera treatment centres (CTCs) should be set up among the affected populations. With proper treatment, the case fatality rate should remain below 1%.

Prevention and control

A multidisciplinary approach based on prevention, preparedness and response, along with an efficient surveillance system, is key for mitigating cholera outbreaks, controlling cholera in endemic areas and reducing deaths.

Outbreak response

Once an outbreak is detected, the usual intervention strategy is to reduce deaths by ensuring prompt access to treatment, and to control the spread of the disease by providing safe water, proper sanitation and health education for improved hygiene and safe food handling practices by the community. The provision of safe water and sanitation is a formidable challenge but remains the critical factor in reducing the impact of cholera.

Oral cholera vaccines

There are two types of safe and effective oral cholera vaccines currently available on the market. Both are whole-cell killed vaccines, one with a recombinant B-sub unit, the other without. Both have sustained protection of over 50% lasting for two years in endemic settings.

Both vaccines are WHO-prequalified and licensed in over 60 countries. Dukoral has been shown to provide short-term protection of 85–90% against V. cholerae O1 among all age groups at 4–6 months following immunization.

The other vaccine (Shanchol) provides longer-term protection against V. cholerae O1 and O139 in children under five years of age.

Both vaccines are administered in two doses given between seven days and six weeks apart. The vaccine with the B-subunit (Dukoral) is given in 150 ml of safe water.

WHO recommends that immunization with currently available cholera vaccines be used in conjunction with the usually recommended control measures in areas where cholera is endemic as well as in areas at risk of outbreaks. Vaccines provide a short term effect while longer term activities like improving water and sanitation are put in place.

When used, vaccination should target vulnerable populations living in high risk areas and should not disrupt the provision of other interventions to control or prevent cholera epidemics. The WHO 3-step decision making tool aims at guiding health authorities in deciding whether to use cholera vaccines in complex emergency settings.

The use of the parenteral cholera vaccine has never been recommended by WHO due to its low protective efficacy and the high occurrence of severe adverse reactions.

Travel and trade

Today, no country requires proof of cholera vaccination as a condition for entry. Past experience shows that quarantine measures and embargoes on the movement of people and goods are unnecessary. Isolated cases of cholera related to imported food have been associated with food in the possession of individual travelers. Consequently, import restrictions on food produced under good manufacturing practices, based on the sole fact that cholera is epidemic or endemic in a country, are not justified.

Countries neighboring cholera-affected areas are encouraged to strengthen disease surveillance and national preparedness to rapidly detect and respond to outbreaks should cholera spread across borders. Further, information should be provided to travelers and the community on the potential risks and symptoms of cholera, together with precautions to avoid cholera, and when and where to report cases.

Recommended Immunization Schedule for Adults Aged 19 Years or Older, 2018

Infectio®

In February 2018, the Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018 became effective, as recommended by the Advisory Committee on Immunization Practices (ACIP) and approved by the Centers for Disease Control and Prevention (CDC). The adult immunization schedule was also approved by the American College of Physicians, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Nurse-Midwives.

CDC announced the availability of the 2018 adult immunization schedule in the Morbidity and Mortality Weekly Report (MMWR).[1] The schedule is published in its entirety in the Annals of Internal Medicine.[2]

The adult immunization schedule consists of figures that summarize routinely recommended vaccines for adults by age groups and medical conditions and other indications, footnotes for the figures, and a table of vaccine contraindications and precautions. Note the following when reviewing the adult immunization schedule:

- The figures in the adult immunization schedule should be reviewed with the accompanying footnotes.
- The figures and footnotes display indications for which vaccines, if not previously administered, should be administered unless noted otherwise.
- The table of contraindications and precautions identifies populations and situations for which vaccines should not be used or should be used with caution.
- When indicated, administer recommended vaccines to adults whose vaccination history is incomplete or unknown.
- Increased interval between doses of a multidose vaccine series does not diminish vaccine effectiveness; it is not necessary to restart the vaccine series or add doses to the series because of an extended interval between doses.
- Combination vaccines may be used when any component of the combination is indicated and when the other components of the combination are not contraindicated.
- The use of trade names in the adult immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Special populations that need additional considerations include:

- Pregnant women. Pregnant women should receive the tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during pregnancy and the influenza vaccine during or before pregnancy. Live vaccines (e.g., measles, mumps, and rubella vaccine [MMR]) are contraindicated.
- Asplenia. Adults with asplenia have specific vaccination recommendations because of their increased risk for infection by encapsulated bacteria. Anatomical or functional asplenia includes congenital or acquired asplenia, splenic dysfunction, sickle cell disease and other hemoglobinopathies, and splenectomy.
- Immunocompromising conditions. Adults with immunosuppression should generally avoid live vaccines. Inactivated vaccines (e.g., pneumococcal vaccines) are generally acceptable. High-level immunosuppression includes HIV infection with a CD4 cell count <200 cells/µL, receipt of daily corticosteroid therapy with ≥20 mg of prednisone or equivalent for ≥14 days, primary immunodeficiency disorder (e.g., severe combined immunodeficiency or complement component deficiency), and receipt of cancer chemotherapy. Other immunocompromising conditions and immunosuppressive medications to consider when vaccinating adults can be found in IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host.[3] Additional information on vaccinating immunocompromised adults is in General Best Practice Guidelines for Immunization.[4]

Additional resources for health care providers include:

- Details on vaccines recommended for adults and complete ACIP statements at www.cdc.gov /vaccines/hcp /acip-recs /index.html
- Vaccine Information Statements that explain benefits and risks of vaccines at www.cdc.gov/vaccines/hcp/vis/index.html
- Information and resources on vaccinating pregnant women at www.cdc.gov/vaccines/adults/rec-vac/pregnant.html
- Information on travel vaccine requirements and recommendations at www.cdc.gov/travel/destinations/list
- CDC Vaccine Schedules App for immunization service providers to download at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html
- Adult Vaccination Quiz for self-assessment of vaccination needs based on age, health conditions, and other indications at www2.cdc.gov/nip/adultimmsched/default.asp
- Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger at www.cdc.gov /vaccines/schedules/hcp/child-adolescent.html

Report suspected cases of reportable vaccine-preventable diseases to the local or state health department, and report all clinically significant postvaccination events to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or by telephone, 800-822-7967. All vaccines included in the adult immunization schedule except 23-valent pneumococcal polysaccharide and zoster vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. Submit questions and comments to CDC through www.cdc.gov/cdc-info or by telephone, 800-CDC-INFO (800-232-4636), in English and Spanish, 8:00am–8:00pm ET, Monday–Friday, excluding holidays.

The following abbreviations are used for vaccines in the adult immunization schedule (in the order of their appearance):

IIV	inactivated influenza vaccine
RIV	recombinant influenza vaccine
Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine
Td	tetanus and diphtheria toxoids
MMR	measles, mumps, and rubella vaccine
VAR	varicella vaccine
RZV	recombinant zoster vaccine
ZVL	zoster vaccine live
HPV vaccine	human papillomavirus vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PPSV23	23-valent pneumococcal polysaccharide vaccine
HepA	hepatitis A vaccine
HepA-HepB	hepatitis A vaccine and hepatitis B vaccine
HepB	hepatitis B vaccine
MenACWY	serogroups A, C, W, and Y meningococcal vaccine
MenB	serogroup B meningococcal vaccine
Hib	Haemophilus influenzae type b vaccine

1. MMWR Morb Mortal Wkly Rep. 2018;66(5). Available at www.cdc.gov/mmwr/volumes/67/wr/mm6705e3.htm.
2. Ann Intern Med. 2018;168:210–220. Available at annals.org/aim/article/doi/10.7326/M17-3439.
3. Clin Infect Dis. 2014;58:e44-100. Available at www.idsociety.org/Templates/Content.aspx?id=32212256011.
4. ACIP. Available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group, 2018

This figure should be reviewed with the accompanying footnotes. This figure and the footnotes describe indications for which vaccines, if not previously administered, should be administered unless noted otherwise.

Vaccine	19–21 years	22–26 years	27–59 years	60–64 years	≥ 65 years
Influenza[1]	1 dose annually				
Tdap[2] or Td[2]	1 dose Tdap, then Td booster every 10 yrs				
MMR[3]	1 or 2 doses depending on indication (if born in 1957 or later)				
VAR[4]	2 doses				
RZV[5] (preferred)				2 doses RZV (preferred)	
ZVL[5]					1 dose ZVL
HPV–Female[6]	2 or 3 doses depending on age at series initiation				
HPV–Male[6]	2 or 3 doses depending on age at series initiation				
PCV13[7]	1 dose				
PPSV23[7]	1 or 2 doses depending on indication				1 dose
HepA[8]	2 or 3 doses depending on vaccine				
HepB[9]	3 doses				
MenACWY[10]	1 or 2 doses depending on indication, then booster every 5 yrs if risk remains				
MenB[10]	2 or 3 doses depending on vaccine				
Hib[11]	1 or 3 doses depending on indication				

Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended for adults with other indications

No recommendation

Figure 2. Recommended immunization schedule for adults aged 19 years or older by medical condition and other indications, 2018

This figure should be reviewed with the accompanying footnotes. This figure and the footnotes describe indications for which vaccines, if not previously administered, should be administered unless noted otherwise.

Vaccine	Pregnancy[1-6,9]	Immuno-compromised (excluding HIV infection)[3-7,11]	HIV infection CD4+ count (cells/μL)[3-7,9-11] < 200	HIV infection CD4+ count (cells/μL)[3-7,9-11] ≥ 200	Asplenia, complement deficiencies[7,10,11]	End-stage renal disease, on hemodialysis[7,9]	Heart or lung disease, alcoholism[7]	Chronic liver disease[7-9]	Diabetes[7,9]	Health care personnel[3,4,9]	Men who have sex with men[6,8,9]
Influenza[1]	1 dose annually										
Tdap[2] or Td[2]	1 dose Tdap each pregnancy	1 dose Tdap, then Td booster every 10 yrs									
MMR[3]	contraindicated	1 or 2 doses depending on indication									
VAR[4]	contraindicated	2 doses									
RZV[5] (preferred)					2 doses RZV at age >50 yrs (preferred)						
or											
ZVL[5]	contraindicated			1 dose ZVL at age >60 yrs							
HPV–Female[6]		3 doses through age 26 yrs									
HPV–Male[6]		3 doses through age 26 yrs									2 or 3 doses through age 26 yrs
PCV13[7]		1 doses									
PPSV23[7]		1, 2, or 3 doses depending on indication									
HepA[8]	2 or 3 doses depending on vaccine										
HepB[9]	3 doses										
MenACWY[10]	1 or 2 doses depending on indication , then booster every 5 yrs if risk remains										
MenB[10]	2 or 3 doses depending on vaccine										
Hib[11]	3 doses HSCT recipients only	1 dose									

Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended for adults with other indications

Contraindicated

No recommendation

Footnotes. Recommended immunization schedule for adults aged 19 years or older, 2018

1.Influenza vaccination

General information

- Administer 1 dose of age-appropriate inactivated influenza vaccine (IIV) or recombinant influenza vaccine (RIV) annually
- Live attenuated influenza vaccine (LAIV) is not recommended for the 2017–2018 influenza season
- A list of currently available influenza vaccines is available at www.cdc.gov/flu/protect/vaccine/vaccines.htm

Special populations

- Administer age-appropriate IIV or RIV to:
  - **Pregnant women**
  - Adults with **hives-only egg allergy**
  - Adults with egg allergy other than hives (e.g., angioedema or respiratory distress): Administer IIV or RIV in a medical setting under supervision of a health care provider who can recognize and manage severe allergic conditions

2. Tetanus, diphtheria, and pertussis vaccination

General information

- Administer to adults who previously did not receive a dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) as an adult or child (routinely recommended at age 11–12 years) 1 dose of Tdap, followed by a dose of tetanus and diphtheria toxoids (Td) booster every 10 years
- Information on the use of Tdap or Td as tetanus prophylaxis in wound management is available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm

Special populations

- Pregnant women: Administer 1 dose of Tdap during each pregnancy, preferably in the early part of gestational weeks 27–36

3. Measles, mumps, and rubella vaccination

General information

- Administer 1 dose of measles, mumps, and rubella vaccine (MMR) to adults with no evidence of immunity to measles, mumps, or rubella
- Evidence of immunity is:
  - Born before 1957 (except for health care personnel, see below)
  - Documentation of receipt of MMR
  - Laboratory evidence of immunity or disease
  - Documentation of a health care provider-diagnosed disease without laboratory confirmation is not considered evidence of immunity

Special populations

- Pregnant women and nonpregnant women of childbearing age with no evidence of immunity to rubella: Administer 1 dose of MMR (if pregnant, administer MMR after pregnancy and before discharge from health care facility)
- HIV infection and CD4 cell count ≥200 cells/μL for at least 6 months and no evidence of immunity to measles, mumps, or rubella: Administer 2 doses of MMR at least 28 days apart
- Students in postsecondary educational institutions, international travelers, and household contacts of immunocompromised persons: Administer 2 doses of MMR at least 28 days apart (or 1 dose of MMR if previously administered 1 dose of MMR)
- Health care personnel born in 1957 or later with no evidence of immunity: Administer 2 doses of MMR at least 28 days apart for measles or mumps, or 1 dose of MMR for rubella (if born before 1957, consider MMR vaccination)
- Adults who previously received ≤2 doses of mumps-containing vaccine and are identified by public health authority to be at increased risk for mumps in an outbreak: Administer 1 dose of MMR
- MMR is contraindicated for pregnant women and adults with severe immunodeficiency

4. Varicella vaccination

General information

- Administer to adults without evidence of immunity to varicella 2 doses of varicella vaccine (VAR) 4–8 weeks apart if previously received no varicella-containing vaccine (if previously received 1 dose of varicella-containing vaccine, administer 1 dose of VAR at least 4 weeks after the first dose)
- Evidence of immunity to varicella is:
  - U.S.-born before 1980 (except for pregnant women and health care personnel, see below)
  - Documentation of receipt of 2 doses of varicella or varicella-containing vaccine at least 4 weeks apart
  - Diagnosis or verification of history of varicella or herpes zoster by a health care provider
  - Laboratory evidence of immunity or disease

Special populations

- Administer 2 doses of VAR 4–8 weeks apart if previously received no varicella-containing vaccine (if previously received 1 dose of varicella-containing vaccine, administer 1 dose of VAR at least 4 weeks after the first dose) to:
  - **Pregnant women without evidence of immunity:** Administer the first of the 2 doses or the second dose after pregnancy and before discharge from health care facility
  - **Health care personnel without evidence of immunity**
- Adults with **HIV infection and CD4 cell count ≥200 cells/μL:** May administer, based on individual clinical decision, 2 doses of VAR 3 months apart
- VAR is contraindicated for pregnant women and adults with severe immunodeficiency

5. Zoster vaccination

General information

- Administer 2 doses of recombinant zoster vaccine (RZV) 2–6 months apart to adults aged 50 years or older regardless of past episode of herpes zoster or receipt of zoster vaccine live (ZVL)
- Administer 2 doses of RZV 2–6 months apart to adults who previously received ZVL at least 2 months after ZVL
- For adults aged 60 years or older, administer either RZV or ZVL (RZV is preferred)

Special populations

- ZVL is contraindicated for pregnant women and adults with severe immunodeficiency

6. Human papillomavirus vaccination

General information

- Administer human papillomavirus (HPV) vaccine to **females through age 26 years and males through age 21 years** (males aged 22 through 26 years may be vaccinated based on individual clinical decision)
- The number of doses of HPV vaccine to be administered depends on age at initial HPV vaccination
  - **No previous dose of HPV vaccine:** Administer 3-dose series at 0, 1–2, and 6 months (minimum intervals: 4 weeks between doses 1 and 2, 12 weeks between doses 2 and 3, and 5 months between doses 1 and 3; repeat doses if given too soon)
  - **Aged 9–14 years at HPV vaccine series initiation and received 1 dose or 2 doses less than 5 months apart:** Administer 1 dose
  - **Aged 9–14 years at HPV vaccine series initiation and received 2 doses at least 5 months apart:** No additional dose is needed

Special populations

- Adults with **immunocompromising conditions (including HIV infection)** through age 26 years: Administer 3-dose series at 0, 1–2, and 6 months
- **Men who have sex with men** through age 26 years: Administer 2- or 3-dose series depending on age at initial vaccination (see above); if no history of HPV vaccine, administer 3-dose series at 0, 1–2, and 6 months
- **Pregnant women** through age 26 years: HPV vaccination is not recommended during pregnancy, but there is no evidence that the vaccine is harmful and no intervention needed for women who inadvertently receive HPV vaccine while pregnant; delay remaining doses until after pregnancy; pregnancy testing is not needed before vaccination

7. Pneumococcal vaccination

General information

- Administer to immunocompetent adults aged 65 years or older 1 dose of 13-valent pneumococcal conjugate vaccine (PCV13), if not previously administered, followed by 1 dose of 23-valent pneumococcal polysaccharide vaccine (PPSV23) at least 1 year after PCV13; if PPSV23 was previously administered but not PCV13, administer PCV13 at least 1 year after PPSV23
- When both PCV13 and PPSV23 are indicated, administer PCV13 first (PCV13 and PPSV23 should not be administered during the same visit); additional information on vaccine timing is available at www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf

Special populations

- Administer to adults aged 19 through 64 years with the following chronic conditions 1 dose of PPSV23 (at age 65 years or older, administer 1 dose of PCV13, if not previously received, and another dose of PPSV23 at least 1 year after PCV13 and at least 5 years after PPSV23):
  - **Chronic heart disease** (excluding hypertension)
  - **Chronic lung disease**
  - **Chronic liver disease**
  - **Alcoholism**
  - **Diabetes mellitus**
  - **Cigarette smoking**
- Administer to adults aged 19 years or older with the following indications 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks after PCV13, and a second dose of PPSV23 at least 5 years after the first dose of PPSV23 (if the most recent dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23):
  - **Immunodeficiency disorders** (including B- and T-lymphocyte deficiency, complement deficiencies, and phagocytic disorders)
  - **HIV infection**
  - **Anatomical or functional asplenia** (including sickle cell disease and other hemoglobinopathies)
  - **Chronic renal failure and nephrotic syndrome**
- Administer to adults aged 19 years or older with the following indications 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks after PCV13 (if the dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23):
  - **Cerebrospinal fluid leak**
  - **Cochlear implant**

8. Hepatitis A vaccination

General information

- Administer to adults who have a specific risk (see below), or lack a risk factor but want protection, 2-dose series of single antigen hepatitis A vaccine (HepA; Havrix at 0 and 6–12 months or Vaqta at 0 and 6–18 months; minimum interval: 6 months) or a 3-dose series of combined hepatitis A and hepatitis B vaccine (HepA-HepB) at 0, 1, and 6 months; minimum intervals: 4 weeks between first and second doses, 5 months between second and third doses

Special populations

- Administer HepA or HepA-HepB to adults with the following indications:
  - **Travel** to or work in countries with high or intermediate hepatitis A endemicity
  - **Men who have sex with men**
  - **Injection or non-injection drug use**
  - **Work with hepatitis A virus in a research laboratory or with nonhuman primates infected with hepatitis A virus**
  - **Clotting factor disorders**
  - **Chronic liver disease**
  - Close, personal contact with an international adoptee (e.g., household or regular babysitting) during the first 60 days after arrival in the United States from a country with high or intermediate endemicity (administer the first dose as soon as the adoption is planned)
  - Healthy adults **through age 40 years who have recently been exposed to hepatitis A virus;** adults older than age 40 years may receive HepA if hepatitis A immunoglobulin cannot be obtained

9. Hepatitis B vaccination

General information

Administer to adults who have a specific risk (see below), or lack a risk factor but want protection, 3-dose series of single antigen hepatitis B vaccine (HepB) or combined hepatitis A and hepatitis B vaccine (HepA-HepB) at 0, 1, and 6 months (minimum intervals: 4 weeks between doses 1 and 2 for HepB and HepA-HepB; between doses 2 and 3, 8 weeks for HepB and 5 months for HepA-HepB)

Special populations

- Administer HepB or HepA-HepB to adults with the following indications:
  - **Chronic liver disease** (e.g., hepatitis C infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
  - **HIV infection**
  - **Percutaneous or mucosal risk of exposure to blood** (e.g., **household contacts** of hepatitis B surface antigen [HBsAg]-positive persons; adults younger than age 60 years with diabetes mellitus or aged 60 years or older with **diabetes mellitus** based on individual clinical decision; adults in predialysis care or receiving **hemodialysis or peritoneal dialysis;** recent or current **injection drug users; health care and public safety workers** at risk for exposure to blood or blood-contaminated body fluids)
  - **Sexual exposure risk** (e.g., sex partners of HBsAg-positive persons; sexually active persons not in a mutually monogamous relationship; persons seeking evaluation or treatment for a sexually transmitted infection; and **men who have sex with men** [MSM])
  - Receive care in **settings where a high proportion of adults have risks for hepatitis B infection** (e.g., facilities providing sexually transmitted disease treatment, drug-abuse treatment and prevention services, hemodialysis and end-stage renal disease programs, institutions for developmentally disabled persons, health care settings targeting services to injection drug users or MSM, HIV testing and treatment facilities, and correctional facilities)
  - **Travel** to countries with high or intermediate hepatitis B endemicity

10. Meningococcal vaccination

Special populations: Serogroups A, C, W, and Y meningococcal vaccine (MenACWY)

- Administer 2 doses of MenACWY at least 8 weeks apart and revaccinate with 1 dose of MenACWY every 5 years, if the risk remains, to adults with the following indications:
  - **Anatomical or functional asplenia** (including sickle cell disease and other hemoglobinopathies)
  - **HIV infection**
  - **Persistent complement component deficiency**
  - **Eculizumab use**
- Administer 1 dose of MenACWY and revaccinate with 1 dose of MenACWY every 5 years, if the risk remains, to adults with the following indications:
  - **Travel to or live in countries where meningococcal disease is hyperendemic or epidemic,** including countries in the African meningitis belt or during the Hajj

    At risk from a **meningococcal disease outbreak attributed to serogroup A, C, W, or Y**
  - **Microbiologists** routinely exposed to Neisseria meningitidis
  - **Military recruits**
  - **First-year college students who live in residential housing** (if they did not receive MenACWY at age 16 years or older)

General Information: Serogroup B meningococcal vaccine (MenB)

- May administer, based on individual clinical decision, to young adults and adolescents aged 16–23 years (preferred age is 16–18 years) who are not at increased risk 2-dose series of MenB-4C (Bexsero) at least 1 month apart or 2-dose series of MenB-FHbp (Trumenba) at least 6 months apart
- MenB-4C and MenB-FHbp are not interchangeable

Special populations: Men B

- Administer 2-dose series of MenB-4C at least 1 month apart or 3-dose series of MenB-FHbp at 0, 1–2, and 6 months to adults with the following indications:
  - **Anatomical or functional asplenia** (including sickle cell disease)
  - **Persistent complement component deficiency**
  - **Eculizumab use**
  - At risk from a **meningococcal disease outbreak attributed to serogroup B**
  - **Microbiologists** routinely exposed to Neisseria meningitidis

11. Haemophilus influenzae type b vaccination

Special populations

- Administer Haemophilus influenzae type b vaccine (Hib) to adults with the following indications:
  - **Anatomical or functional asplenia** (including sickle cell disease) or undergoing elective splenectomy: Administer 1 dose if not previously vaccinated (preferably at least 14 days before elective splenectomy)
  - **Hematopoietic stem cell transplant** (HSCT): Administer 3-dose series with doses 4 weeks apart starting 6 to 12 months after successful transplant regardless of Hib vaccination history

Table. Contraindications and precautions for vaccines recommended for adults aged 19 years or older*

The Advisory Committee on Immunization Practices (ACIP) recommendations and package inserts for vaccines provide information on contraindications and precautions related to vaccines. Contraindications are conditions that increase chances of a serious adverse reaction in vaccine recipients and the vaccine should not be administered when a contraindication is present. Precautions should be reviewed for potential risks and benefits for vaccine recipients.

Contraindications and precautions for vaccines routinely recommended for adults

Vaccine	Contraindications	Precautions
All vaccines routinely recommended for adults	• Severe reaction, e.g., anaphylaxis, after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever

Additional contraindications and precautions for vaccines routinely recommended for adults

Vaccine	Additional Contraindications	Additional Precautions
IIV[1]		• History of Guillain-Barré Syndrome within 6 weeks after previous influenza vaccination • Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a healthcare provider who is able to recognize and manage severe allergic conditions)
RIV[1]		• History of Guillain-Barré Syndrome within 6 weeks after previous influenza vaccination
Tdap/Td	• For pertussis-containing vaccines: encephalopathy, e.g., coma, decreased level of consciousness, or prolonged seizures, not attributable to another identifiable cause within 7 days of administration of a previous dose of a vaccine containing tetanus or diphtheria toxoid or acellular pertussis	• Guillain-Barré Syndrome within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of tetanus or diphtheria toxoid-containing vaccine. Defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine • For pertussis-containing vaccine, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy (until a treatment regimen has been established and the condition has stabilized)
MMR[2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], human immunodeficiency virus (HIV) infection with severe immunocompromise • Pregnancy	• Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[4] • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing[5]
VAR[2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], HIV infection with severe immunocompromise • Pregnancy	• Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[4] • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
ZVL [2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], HIV infection with severe immunocompromise • Pregnancy	• Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
HPV vaccine		• Pregnancy
PCV13	• Severe allergic reaction to any vaccine containing diphtheria toxoid	

1. For additional information on use of influenza vaccines among persons with egg allergy, see: CDC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices-United States, 2016–17 influenza season. MMWR 2016;65(RR-5):1–54. Available at www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm.
2. MMR may be administered together with VAR or HZV on the same day. If not administered on the same day, separate live vaccines by at least 28 days.
3. Immunosuppressive steroid dose is considered to be daily receipt of 20 mg or more prednisone or equivalent for two or more weeks. Vaccination should be deferred for at least 1 month after discontinuation of immunosuppressive steroid therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.
4. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered. See: CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2011;60(No. RR-2). Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm
5. Measles vaccination may temporarily suppress tuberculin reactivity. Measles-containing vaccine may be administered on the same day as tuberculin skin testing, or should be postponed for at least 4 weeks after vaccination.

* Adapted from: CDC. Table 6. Contraindications and precautions to commonly used vaccines. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices. MMWR. 2011;60(No. RR-2):40–1 and from: Hamborsky J, Kroger A, Wolfe S, eds. Appendix A. Epidemiology and prevention of vaccine preventable diseases. 13th ed. Washington, DC: Public Health Foundation, 2015. Available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Abbreviations of vaccines

IIV	inactivated influenza vaccine
RIV	recombinant influenza vaccine
Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine
Td	tetanus and diphtheria toxoids
MMR	measles, mumps, and rubella vaccine
VAR	varicella vaccine
RZV	recombinant zoster vaccine
ZVL	zoster vaccine live
HPV	vaccine human papillomavirus vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PPSV23	23-valent pneumococcal polysaccharide vaccine
HepA	hepatitis A vaccine
HepA-HepB	hepatitis A and hepatitis B vaccines
HepB	hepatitis B vaccine
MenACWY	serogroups A, C, W, and Y meningococcal vaccine
MenB	serogroup B meningococcal vaccine
Hib	Haemophilus influenzae type b vaccine

Face to Face with Dr. Sadaf Asim

MBBS, DCH, MCPS, FCPS,
Fellowship Pediatric Nephrology
Assistant Professor- National Institute of Child health / Jinnah Sindh Medical Uuniversity
Consultant Pediatric Nephrologist- Tabba Kidney Institute
Interviewed by: Dr. Shuja Ajaz

Infectio®

Pediatricians are those medical doctors who manage the health of your child, including physical, behavior, and mental health issues. They're trained to diagnose and treat childhood illnesses, from minor health problems to serious diseases.

Pediatricians have an education that gives them special skills to take care of your child's health. They provide medical care to infants, children, adolescents and young adults. They diagnose and treat illnesses, medical conditions and injuries. Easing the lives of children with chronic conditions is another concern. They're also on the lookout for psycho-social problems that affect their patients

Dr. Sadaf Asim, is one of the leading pediatrician of Karachi who has expertise in acute and chronic kidney disease associated in children. During the interview she shared her real life experiences

Q#1. Please share about your education & work experience?

A: I did my basic medical sciences from Bolan Medical College, Quetta. I started my career in the field of pediatrics at National Institute of child health Karachi in 2002. I completed my membership (MCPS) and fellowship (FCPS) from college of physicians and surgeons subject of Pediatrics. While taking care of Pediatric patients, I realized that kidneys of a kid need specific attention so I joined the department of Pediatric Nephrology as Senior Registrar. Then, I did my second fellowship training for FCPS in Pediatric Nephrology from Sindh Institute of Urology & Transplantation (SIUT) Karachi and got appointed as Assistant Professor in Department of Pediatric Nephrology at my parent institute NICH in 2016. Currently I am also associated with Tabba Kidney Institute.

Since then I have attended and participated in numerous national and international Pediatric Nephrology events including Primer in kidney diseases at National University Hospital Singapore in 2015, Neonatal & Infantile Dialysis course at new Delhi Medanta Hospital 2015, International society of Nephrology (ISN) Nexus symposia at Berlin 2016, International Pediatric Nephrology (IPNA) conference at Brazil in 2016 and Asian Society of Pediatric Nephrology conference in 2017 at KL, Malaysia. I am a Master trainer of eight Acute Kidney Injury Workshop accredited by AKU and American Academy of continuing Medical Education.

Q#2. What is the happiest moment being a doctor in your life?

A: When the sickest of your patients come in OPD follow up with a big smile for you.

Q#3. Could you please name the most challenging aspects of your life as a doctor?

A: Being in close contact with children and their

families, their counseling and a long term relation and bonding which is most of the time not possible with adult patients.

Q# 4. Madam, why did you choose to specialize in this segment?

A: I realized that pediatric nephrology is a sensitive and delicate field which needs unique expertise which are not possible by a general pediatrician and adult nephrologist.

To counsel the parents of the child who do not have a favourable outcome in short and long term and you feel helpless. To do justice with every patient in a heavy public sector OPD. To dialyze very small kids.

Q#5. Who is your inspiration/role model?

A: Dr. Zeenat Issani and Dr. Zulfiqar Bhutta, both pediatricians are my role models.

Q#6. How do you keep balance in your professional & personal commitment?

A: I try my level best to prioritize my family and profession; whichever is the demand of that day.

Q#7. What is the most important piece of advice that you like to give to junior doctors and medical students as you are role model for most of them?

A: To continue their profession once they have opted. To set small goals in life that will end up in a bigger success. To attend every patient with full time and concentration. The quality matters and not the quantity at the end of day.

Q#8. If you were not a doctor then what would you have been?

A: I think that doctors are born to become doctors only. Other than that I like to travel and listen music.

Q#9. What is the most common disease these days in your consultation?

A: Non communicable disease and Chronic kidney disease is one of them. We spend heavily to treat that & spend less to prevent.

Q#10. Any message for betterment of magazine or this initiative?

A: Overall I rated it the best and good initiative. I just want to add one thing that include some good review articles on particular topics that are helpful for post-graduates.

Quiz & Winners of Lucky Draw

Reported by: Dr. Shuja Ajaz

Choose the correct answer

1. As per WHO guidelines, dosage of Cefixime in the treatment of typhoid is

A. 10-15kg/body weight

B. 8-20mg/kg body weight

C. 15-20mg/kg body weight

D. 12-16kg/kg body weight

Winners of Lucky Draw

The editorial board of *Infectio*® magazine is pleased to announce the names of winners for quiz from the 8th edition.

The lucky draw was held in a meeting at Dr. Ziauddin University Hospital, Karachi, on 15th September, 2018. Following are the names of Lucky Draw winners drawn at randomly by ***Prof. Ejaz Ahmed Vohra*** and his team.

We congratulate the winners and once again thanks all contestants for their participation in quiz

1.	Dr. Abdul Khalid, Kashmir Surgical Hospital - Muzzafarabad
2.	Dr. Ghulam Shabbir, Nishter Medical College - Multan
3.	Dr. Sajid Mustafa, DHQ Teaching Hospital - Sahiwal
4.	Prof. Haroon Yusuf, Shalimar Hospital - Lahore
5.	Prof. Dilshad Qureshi, Children Hospital - Quetta,
6.	Dr. Geyan Prakash, Mingora Swat
7.	Dr. Sadaf Nasir, Ziauddin Hospital - Karachi
8.	Dr. Tariq Mamtaz, Mamtaz Hospital - Jhang
9.	Prof. Khalid Amin, Faisal Hospital - Faislabad
10.	Dr. Tariq Masood Niazi, Obaid Noor Hospital - Mianwali
11.	Dr. Saima Hanif, Abbotabad Teaching Hospital - Abbotabad
12.	Dr. M. Zubair, Gujranwala Medical College - Gujranwala
13.	Dr. Saleh Memon, Hussainabad - Karachi
14.	Dr. Akhter Hussain Samo, Ghulam Mehar Medical College - Sukkur
15.	Dr. Gorden Das, Saddar - Hyderabad