

List of pathogenic bacteria by basic laboratory characteristics

SNo	Genus	Important species	Gram staining	Shape	Capsulation	Bonding tendency	Motility	Respiration	Growth medium	Intra/Extracellular
1	Bordetella	<ul style="list-style-type: none"> Bordetella pertussis 	Gram-negative	Small coccobacilli	Encapsulated	singly or in pairs		aerobic	Regan-Lowe agar	extracellular
2	Borrelia	<ul style="list-style-type: none"> Borrelia burgdorferi 	Gram-negative, but stains poorly	spirochete		Long, slender, flexible, spiral- or corkscrew-shaped rods	highly motile	anaerobic	(difficult to culture)	extracellular
3	Brucella	<ul style="list-style-type: none"> Brucella abortus Brucella canis Brucella melitensis Brucella suis 	Gram-negative	Small coccobacilli	Unencapsulated	singly or in pairs	non-motile	aerobic	Blood agar	intracellular
4	Campylobacter	<ul style="list-style-type: none"> Campylobacter jejuni 	Gram-negative	Curved, spiral, or S-shaped bacilli with single, polar flagellum	Unencapsulated	Singly	characteristic darting motion	microaerophilic	Blood agar inhibiting other fecal flora	extracellular
5	Chlamydia and Chlamydophila	<ul style="list-style-type: none"> Chlamydia pneumoniae Chlamydia trachomatis Chlamydophila psittaci 	(not Gram-stained)	Small, round, ovoid	Unencapsulated		motile	Facultative or strictly aerobic		Obligate intracellular
6	Clostridium	<ul style="list-style-type: none"> Clostridium botulinum Clostridium difficile Clostridium perfringens Clostridium tetani 	Gram-positive	Large, blunt-ended rods	Normally encapsulated		mostly motile	Obligate anaerobic	Anaerobic blood agar	extracellular
7	Corynebacterium	<ul style="list-style-type: none"> Corynebacterium diphtheriae 	Gram-positive (unevenly)	Small, slender, pleomorphic rods	Unencapsulated	clumps looking like Chinese characters or a picket	nonmotile	Mostly facultative anaerobic	Aerobically on Tinsdale agar	extracellular

						fence					
8	Enterococcus	<ul style="list-style-type: none"> • Enterococcus faecalis • Enterococcus faecium 	Gram-positive	Round to ovoid (cocci)			pairs or chains	Non-motile	Facultative Anaerobic	6.5% NaCl, bile-esculin agar	extracellular
9	Escherichia	<ul style="list-style-type: none"> • Escherichia coli 	Gram-negative	Short rods (bacilli)	Encapsulated and Unencapsulated			Normally motile	Facultative anaerobic	MacConkey agar	extracellular or intracellular
10	Francisella	<ul style="list-style-type: none"> • Francisella tularensis 	Gram-negative	Small, pleomorphic coccobacillus	Encapsulated			Non-motile	strictly aerobic	(rarely cultured)	Facultative intracellular
11	Haemophilus	<ul style="list-style-type: none"> • Haemophilus influenzae 	Gram-negative	Ranging from small coccobacillus to long, slender filaments	Encapsulated or Unencapsulated			Non-motile		Chocolate agar with hemin and NAD ⁺	extracellular
12	Helicobacter	<ul style="list-style-type: none"> • Helicobacter pylori 	Gram-negative	Curved or spiral rods multiple polar flagella				rapid, corkscrew motility	Microaerophile	Medium containing antibiotics against other fecal flora	extracellular
13	Legionella	<ul style="list-style-type: none"> • Legionella pneumophila 	Gram-negative, but stains poorly	Slender rod in nature, cocobacillary in laboratory. monotrichious flagella	unencapsulated			motile	aerobic	Specialized medium	facultative intracellular
14	Leptospira	<ul style="list-style-type: none"> • Leptospira interrogans 	Gram-negative, but stains poorly	Long, very slender, flexible, spiral- or corkscrew-shaped rods				Highly motile	Strictly aerobic	Specialized medium	extracellular
15	Listeria	<ul style="list-style-type: none"> • Listeria monocytogenes 	Gram-positive, darkly	Slender, short rods			diplobacilli or short chains	Distinct tumbling motility in liquid medium	Facultative Anaerobic	enriched medium	intracellular
16	Mycobacterium	<ul style="list-style-type: none"> • Mycobacterium leprae • Mycobacterium tuberculosis • Mycobacterium ulcerans 	(none)	Long, slender rods	Unencapsulated			nonmotile	aerobic	M. tuberculosis: Lowenstein-Jensen agar M. leprae: (none)	extracellular

17	Mycoplasma	<ul style="list-style-type: none"> Mycoplasma pneumoniae 	(none)	Plastic, pleomorphic	Encapsulated	singly or in pairs		Mostly facultative anaerobic; M.pneumoniae strictly aerobic	(rarely cultured)	extracellular
18	Neisseria	<ul style="list-style-type: none"> Neisseria gonorrhoeae Neisseria meningitidis 	Gram-negative	Kidney bean-shaped	Encapsulated or Unencapsulated	diplococci	Non-motile	aerobic	Thayer-Martin agar	Gonococcus: facultative intracellular N. meningitidis: extracellular
19	Pseudomonas	<ul style="list-style-type: none"> Pseudomonas aeruginosa 	Gram-negative	rods	encapsulated		motile	Obligate aerobic	MacConkey agar	extracellular
20	Rickettsia	<ul style="list-style-type: none"> Rickettsia rickettsii 	Gram-negative, but stains poorly	Small, rod-like coccobacillary	Slime/microcapsule		Non-motile	Aerobic	(rarely cultured)	Obligate intracellular
21	Salmonella	<ul style="list-style-type: none"> Salmonella typhi Salmonella typhimurium 	Gram-negative	Bacilli	Encapsulated		Normally motile	Facultative anaerobic	MacConkey agar	Facultative intracellular
22	Shigella	<ul style="list-style-type: none"> Shigella sonnei 	Gram-negative	rods	Unencapsulated		Non-motile	Facultative anaerobic	Hektoen agar	extracellular
23	Staphylococcus	<ul style="list-style-type: none"> Staphylococcus aureus Staphylococcus epidermidis Staphylococcus saprophyticus 	Gram-positive, darkly	Round cocci	Encapsulated or Unencapsulated	in bunches like grapes	Non-motile	Facultative anaerobic	enriched medium (broth and/or blood)	extracellular
24	Streptococcus	<ul style="list-style-type: none"> Streptococcus agalactiae Streptococcus pneumoniae Streptococcus pyogenes 	Gram-positive	ovoid to spherical	Encapsulated or Unencapsulated	pairs or chains	nonmotile	Facultative anaerobic	blood agar	extracellular
25	Treponema	<ul style="list-style-type: none"> Treponema pallidum 	Gram-negative, but stains poorly	Long, slender, flexible, spiral- or corkscrew-shaped rods			highly motile	Aerobic	none	extracellular
26	Vibrio	<ul style="list-style-type: none"> Vibrio cholerae 	Gram-negative	Short, curved, rod-shaped with single polar flagellum	Unencapsulated		rapidly motile	Facultative anaerobic	blood- or MacConkey agar. Stimulated by NaCl	extracellular

27	Yersinia	<ul style="list-style-type: none"> • Yersinia pestis • Yersinia enterocolitica • Yersinia pseudotuberculosis 	Gram-negative, stains bipolarly	Small rods	encapsulated	nonmotile	Facultative Anaerobe	MacConkey or CIN agar	Intracellular
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List of pathogenic bacteria by clinical characteristics

SNo	Species	Transmission	Diseases	Treatment	Prevention	laboratory diagnosis
1	Bacillus anthracis	<ul style="list-style-type: none"> • Contact with sheep, goats and horses • Inhalation or skin penetration through abrasions of spore-contaminated dust 	<ul style="list-style-type: none"> • Cutaneous anthrax • Pulmonary anthrax • Gastrointestinal anthrax 	<p>In early infection:</p> <ul style="list-style-type: none"> • Penicillin • Doxycycline • Ciprofloxacin 	<ul style="list-style-type: none"> • Anthrax vaccine • autoclaving of instruments 	<ul style="list-style-type: none"> • Large, grayish, nonhemolytic colonies with irregular borders on blood agar • Direct immunofluorescence
2	Bordetella pertussis	<ul style="list-style-type: none"> • Contact with respiratory droplets expelled by infected human hosts. 	<ul style="list-style-type: none"> • Whooping cough <p>Complications:</p> <ul style="list-style-type: none"> • Secondary bacterial pneumonia 	<p>Macrolide antibiotics</p> <ul style="list-style-type: none"> • Azithromycin • Erythromycin • Clarithromycin 	<ul style="list-style-type: none"> • Pertussis vaccine, DPT vaccine 	<ul style="list-style-type: none"> • Direct immunofluorescence • PCR amplification
3	Borrelia burgdorferi	<p>Ixodes ticks reservoir in deer, mice and other rodents</p>	<ul style="list-style-type: none"> • Lyme disease 	<ul style="list-style-type: none"> • Early stages: <ul style="list-style-type: none"> ◦ cephalosporins ◦ amoxicillin ◦ doxycycline • If arthritic symptoms have appeared: <ul style="list-style-type: none"> ◦ Longer courses of antibiotics 	<ul style="list-style-type: none"> • Lyme vaccine • wearing clothing that limits skin exposure to ticks • insect repellent 	<ul style="list-style-type: none"> • Microscopy using Giemsa or Wright stain • PCR • serology (low precision rate)
4	<ul style="list-style-type: none"> • Brucella abortus • Brucella canis • Brucella melitensis • Brucella suis 	<ul style="list-style-type: none"> • Direct contact with infected animal • Oral, by ingestion of unpasteurized milk or milk products 	<ul style="list-style-type: none"> • Brucellosis 	<p>Combination therapy of:</p> <ul style="list-style-type: none"> • doxycycline • streptomycin or gentamicin 		<ul style="list-style-type: none"> • Culture (difficult and time consuming) • Agglutination serology
5	Campylobacter	<ul style="list-style-type: none"> • Fecal/oral from animals (mammals and fowl) • Contaminated meat 	<ul style="list-style-type: none"> • Acute enteritis 	<ul style="list-style-type: none"> • Symptomatically by fluid and electrolyte replacement 	<p>No available vaccine</p> <ul style="list-style-type: none"> • Good hygiene • Avoiding contaminated water 	<ul style="list-style-type: none"> • Finding campylobacter in feces

	jejunii	<ul style="list-style-type: none"> (especially poultry) Contaminated water 		Ciprofloxacin in severe cases	Pasteurizing milk and milk products <ul style="list-style-type: none"> Cooking meat (especially poultry) 	
6	Chlamydia pneumoniae	<ul style="list-style-type: none"> Respiratory droplets 	Community-acquired respiratory infection	<ul style="list-style-type: none"> Doxycycline Erythromycin 	None	None for routine use
7	Chlamydia trachomatis	<ul style="list-style-type: none"> Sexual (NGU, LGV) Direct or contaminated surfaces and flies (trachoma) Passage through birth canal (ICN) 	<ul style="list-style-type: none"> Nongonococcal urethritis (NGU) Lymphogranuloma venereum (LGV) Trachoma Inclusion conjunctivitis of the newborn (ICN) 	<ul style="list-style-type: none"> Azithromycin Erythromycin Tetracyclines <ul style="list-style-type: none"> Doxycycline 	No vaccine <ul style="list-style-type: none"> Erythromycin or silver nitrate in newborn's eyes Safe sex 	<ul style="list-style-type: none"> Cellular cytoplasmic inclusions by immunofluorescence DNA hybridization ELISA for lipopolysaccharides
8	Chlamydophila psittaci	Inhalation of dust with secretions or feces from birds (e.g. parrots)	Psittacosis	<ul style="list-style-type: none"> Tetracycline Doxycycline Erythromycin (less efficient) 	-	<ul style="list-style-type: none"> Rise in antibody titre <ul style="list-style-type: none"> Complement fixation indirect immunofluorescence
9	Clostridium botulinum	Spores from soil and aquatic sediments contaminating vegetables, meat and fish	<ul style="list-style-type: none"> Botulism 	<ul style="list-style-type: none"> Antitoxin (horse antiserum) 	<ul style="list-style-type: none"> Proper food preservation techniques 	<ul style="list-style-type: none"> Mouse inoculation detects toxin from food, intestinal contents or serum Culture in standard aerobic culture
10	Clostridium difficile	<ul style="list-style-type: none"> Spores both indoors and outdoors Human flora, overgrowing when other flora is depleted 	<ul style="list-style-type: none"> Pseudomembranous colitis 	<ul style="list-style-type: none"> Discontinuing predisposing antibiotic Fluid and electrolyte replacement Vancomycin or metronidazole if severe 	None	<ul style="list-style-type: none"> ELISA for Toxin ELISA for toxin A or B Endoscopy for pseudomembrane
11	Clostridium perfringens	<ul style="list-style-type: none"> Spores in soil Human flora in vagina and GI tract 	<ul style="list-style-type: none"> Gas gangrene Acute food poisoning Anaerobic cellulitis 	Gas gangrene: <ul style="list-style-type: none"> Debridement or amputation Hyperbaric medicine High doses of penicillin G or doxycycline Food poisoning:	Appropriate food handling	<ul style="list-style-type: none"> Microscopically Blood agar culture, forming double-zone β-hemolysis Sugar fermentation Organic acid production

				<ul style="list-style-type: none"> • Self-limiting; Supportive care is sufficient 		
12	Clostridium tetani	<ul style="list-style-type: none"> • Spores in soil infecting puncture wounds, severe burns or surgery 	<ul style="list-style-type: none"> • Tetanus 	<ul style="list-style-type: none"> • Tetanus immune globulin • Horse antitoxin, alternatively • Sedatives • Muscle relaxants • Mechanical ventilation 	<ul style="list-style-type: none"> • DPT vaccine 	(difficult)
13	Corynebacterium diphtheriae	<ul style="list-style-type: none"> • Respiratory droplets • Part of human flora 	<ul style="list-style-type: none"> • Diphtheria 	<ul style="list-style-type: none"> • Horse serum antitoxin • Erythromycin • Penicillin 	<ul style="list-style-type: none"> • DPT vaccine 	(no rapid) <ul style="list-style-type: none"> • Culture on Tinsdale agar, followed by immunologic precipitin reaction
14	Enterococcus faecalis and Enterococcus faecium	<ul style="list-style-type: none"> • Part of human flora, opportunistic or entering through GI tract or urinary system wounds 	<ul style="list-style-type: none"> • Nosocomial infections 	<ul style="list-style-type: none"> • Penicillin and an aminoglycoside • Vancomycin • Quinupristin and dalfopristin 	No vaccine <ul style="list-style-type: none"> • Hand washing and other nosocomial prevention 	<ul style="list-style-type: none"> • Culture in 6.5% NaCl • Can hydrolyze esculin in presence of bile
15	Escherichia coli (generally)	<ul style="list-style-type: none"> • Part of gut flora, spreading extraintestinally or proliferating in the GI tract 	<ul style="list-style-type: none"> • Urinary tract infections (UTI) • Diarrhea • Meningitis in infants 	<p>UTI:</p> <p>(resistance-tests are required first)</p> <ul style="list-style-type: none"> • Co-trimoxazole • Fluoroquinolone, e.g. ciprofloxacin <p>Meningitis:</p> <ul style="list-style-type: none"> • Cephalosporin (e.g. cefotaxime) and gentamicin combination <p>Diarrhea:</p> <ul style="list-style-type: none"> • Antibiotics above shorten duration • Electrolyte and fluid replacement 	(no vaccine or preventive drug) <ul style="list-style-type: none"> • Food and water preparation <ul style="list-style-type: none"> ◦ Cooking ground beef and pasteurizing milk against O157:H7 • Hand washing and disinfection 	<ul style="list-style-type: none"> • Culture on MacConkey agar and study carbohydrate fermentation patterns: <ul style="list-style-type: none"> ◦ Lactose fermentation (most E. coli strains) ◦ Gas production in glucose fermentation ◦ Mannitol fermentation
		<ul style="list-style-type: none"> • Fecal-oral through 				

16	Enterotoxigenic Escherichia coli (ETEC)	<ul style="list-style-type: none"> food and water Direct physical contact 	<ul style="list-style-type: none"> Traveller's diarrhea 			
17	Enteropathogenic E. coli	<ul style="list-style-type: none"> Vertical, in utero or at birth 	<ul style="list-style-type: none"> Diarrhea in infants 			
18	E. coli O157:H7	<ul style="list-style-type: none"> Reservoir in cattle 	<ul style="list-style-type: none"> Hemorrhagic colitis Hemolytic-uremic syndrome 			
19	Francisella tularensis	<ul style="list-style-type: none"> vector-borne by arthropods Infected wild or domestic animals, birds or house pets 	<ul style="list-style-type: none"> Tularemia 	<ul style="list-style-type: none"> Streptomycin Gentamicin 	<ul style="list-style-type: none"> Avoiding insect vectors Precautions when handling wild animals or animal products 	<p>(rarely cultured)</p> <ul style="list-style-type: none"> Serology
20	Haemophilus influenzae	<ul style="list-style-type: none"> Droplet contact Human flora of e.g. upper respiratory tract 	<ul style="list-style-type: none"> Bacterial meningitis Upper respiratory tract infections Pneumonia, bronchitis 	<p>Meningitis: (resistance-tests are required first)</p> <ul style="list-style-type: none"> Third generation cephalosporin, e.g. cefotaxime or ceftriaxone Ampicillin and sulbactam combination 	<ul style="list-style-type: none"> Hib vaccine to infants Rifampin prophylactically 	<ul style="list-style-type: none"> Culture on chocolate agar with hemin (factor X) and NAD⁺ (factor V) Quellung reaction Immunofluorescence staining of capsule Detection of capsular antigen in CSF or other body fluids
21	Helicobacter pylori	<ul style="list-style-type: none"> Colonizing stomach Unclear person-to-person transmission 	<ul style="list-style-type: none"> Peptic ulcer Risk factor for gastric carcinoma and gastric B-cell lymphoma 	<ul style="list-style-type: none"> Tetracycline, metronidazole and bismuth salt combination 	<p>(No vaccine or preventive drug)</p>	<ul style="list-style-type: none"> Microscopically <ul style="list-style-type: none"> Corkscrew movement Urease-positivity by radioactively labeled urea Serology by ELISA
22	Legionella pneumophila	<ul style="list-style-type: none"> Droplet contact, from e.g. cooling towers, humidifiers, air conditioners and water distribution systems 	<ul style="list-style-type: none"> Legionnaire's Disease Pontiac fever 	<ul style="list-style-type: none"> Macrolides, e.g. erythromycin or azithromycin Fluoroquinolones 	<p>(no vaccine or preventive drug)</p> <p>Heating water</p>	<ul style="list-style-type: none"> Culture from respiratory secretions on buffered charcoal yeast extract enriched with L-cysteine, iron and α-ketoglutarate Serology, including direct immunofluorescence and radioimmunoassay for antigen in urine Hybridization to ribosomal RNA using DNA probe

23	Leptospira interrogans	<ul style="list-style-type: none"> Food and water contaminated by e.g. urine from wild or domestic animals. Leptospira survives for weeks in stagnant water. 	<ul style="list-style-type: none"> Leptospirosis 	<ul style="list-style-type: none"> Penicillin G Tetracycline, e.g. doxycycline 	<p>(no vaccine)</p> <ul style="list-style-type: none"> Doxycycline <p>Prevention of exposure</p> <ul style="list-style-type: none"> Rodent control 	<ul style="list-style-type: none"> Dark-field microscopy on fresh blood smear (but doesn't stain well) Serologic agglutination tests
24	Listeria monocytogenes	<ul style="list-style-type: none"> Dairy products, ground meats, poultry Vertical to newborn or fetus 	<ul style="list-style-type: none"> Listeriosis 	<ul style="list-style-type: none"> Ampicillin Co-trimoxazole 	<p>(no vaccine)</p> <ul style="list-style-type: none"> Proper food preparation and handling 	<p>Isolation from e.g. blood and CSF</p> <ul style="list-style-type: none"> Beta-hemolysis and catalase production on blood agar Microscopy for morphology and motility
25	Mycobacterium leprae	<ul style="list-style-type: none"> Prolonged human-human contact, e.g. through exudates from skin lesions to abrasion of other person 	<ul style="list-style-type: none"> Leprosy (Hansen's disease) 	<p>Tuberculoid form:</p> <ul style="list-style-type: none"> Dapsone and rifampin <p>Lepromatous form:</p> <ul style="list-style-type: none"> Clofazimine 	<ul style="list-style-type: none"> BCG vaccine shows some effects 	<p>Tuberculoid form:</p> <p>Hard to isolate (diagnosis on clinical findings and histology of biopsies)</p> <p>Lepromatous form:</p> <ul style="list-style-type: none"> Acid-fast staining from e.g. skin scrapings
26	Mycobacterium tuberculosis	<ul style="list-style-type: none"> Droplet contact 	<ul style="list-style-type: none"> Tuberculosis 	<p>(difficult, see Tuberculosis treatment for more details)</p> <p>Standard "short" course:</p> <ul style="list-style-type: none"> First 2 months, combination: <ul style="list-style-type: none"> Isoniazid Rifampicin Pyrazinamide Ethambutol Further 4 months, combination: <ul style="list-style-type: none"> Isoniazid Rifampicin 	<ul style="list-style-type: none"> BCG vaccine Isoniazid 	<ul style="list-style-type: none"> Ziehl-Neelsen stain showing acid-fast bacteria Hybridization probes for DNA, succeeded by PCR Culture on Lowenstein-Jensen agar
27	Mycoplasma pneumoniae	<ul style="list-style-type: none"> Human flora Droplet contact 	<ul style="list-style-type: none"> Mycoplasma pneumonia 	<ul style="list-style-type: none"> Doxycycline and erythromycin 		<p>(difficult to culture)</p> <ul style="list-style-type: none"> Serologic tests, e.g. complement fixation test DNA probes on sputum

						specimens
28	<i>Neisseria gonorrhoeae</i>	<ul style="list-style-type: none"> Sexually transmitted vertical in birth 	<ul style="list-style-type: none"> Gonorrhea Ophthalmia neonatorum Septic arthritis 	<p>Uncomplicated gonorrhoea:</p> <ul style="list-style-type: none"> Ceftriaxone Tetracycline, e.g. doxycycline if also chlamydia is suspected Spectinomycin for resistance or patient allergy to cephalosporin <p>Ophthalmia neonatorum:</p> <ul style="list-style-type: none"> Tetracycline or erythromycin into eyes 	(No vaccine) <ul style="list-style-type: none"> Safe sex Tetracycline or erythromycin into eyes of newborn at risk 	<ul style="list-style-type: none"> Gram-negative diplococci in neutrophils from urethral exudates Oxidase test on culture on Thayer-Martin agar under increased oxygen tension Fermentation of glucose but not maltose
29	<i>Neisseria meningitidis</i>	<ul style="list-style-type: none"> Respiratory droplets 	<ul style="list-style-type: none"> Meningococcal disease including meningitis Waterhouse-Friderichsen syndrome 	<ul style="list-style-type: none"> Penicillin G Cefotaxime Ceftriaxone 	<ul style="list-style-type: none"> NmVac4-A/C/Y/W-135 vaccine Rifampin 	<ul style="list-style-type: none"> Microscopy showing gram-negative diplococci, often with PMNs Culture on chocolate agar, giving positive oxidase test and fermentation of glucose and maltose in 5% CO₂ in air
30	<i>Pseudomonas aeruginosa</i>	Infects damaged tissues or people with reduced immunity.	<ul style="list-style-type: none"> <i>Pseudomonas</i> infection <p>Localized to eye, ear, skin, urinary, respiratory or gastrointestinal tract or CNS, or systemic with bacteremia, secondary pneumonia bone and joint infections, endocarditis, skin, soft tissue or CNS infections.</p>	<ul style="list-style-type: none"> Aminoglycoside and anti-pseudomonal β-lactam 	(no vaccine) <ul style="list-style-type: none"> Topical silver sulfadiazine for burn wounds 	<ul style="list-style-type: none"> Colourless colonies on MacConkey agar. Production of pyocyanine and fluorescein Positive oxidase test. No lactose fermentation.
31	<i>Rickettsia rickettsii</i>	<ul style="list-style-type: none"> Bite of infected wood or dog tick 	<ul style="list-style-type: none"> Rocky mountain spotted fever 	<ul style="list-style-type: none"> Doxycycline Chloramphenicol 	(no preventive drug or approved vaccine) <ul style="list-style-type: none"> Vector control, such as clothing Prompt removal of attached ticks 	<ul style="list-style-type: none"> Serology Immunofluorescence against <i>Rickettsia</i> antigens
						<ul style="list-style-type: none"> Isolation from blood,

32	Salmonella typhi	Human-human <ul style="list-style-type: none"> Fecal-oral through food or water 	<ul style="list-style-type: none"> Typhoid fever type salmonellosis (dysentery, colitis) 	<ul style="list-style-type: none"> Ceftriaxone Fluoroquinolones, e.g. ciprofloxacin 	<ul style="list-style-type: none"> Ty21a and ViCPS vaccines Hygiene and food preparation 	<p>feces, bone marrow, urine or rose spots on skin</p> <ul style="list-style-type: none"> Colorless, non-lactose fermenting colonies on MacConkey agar Serology for antibodies against O antigen
33	Salmonella typhimurium	<ul style="list-style-type: none"> Fecal-oral Food contaminated by fowl (e.g. eggs), pets and other animals 	<ul style="list-style-type: none"> Salmonellosis with gastroenteritis and enterocolitis 	<ul style="list-style-type: none"> Fluid and electrolyte replacement for severe diarrhea Antibiotics (in immunocompromised to prevent systemic spread) 	<p>(No vaccine or preventive drug)</p> <ul style="list-style-type: none"> Proper sewage disposal Food preparation Good personal hygiene 	<ul style="list-style-type: none"> Colourless colonies on MacConkey agar
34	Shigella sonnei	<ul style="list-style-type: none"> Fecal-oral Flies Contaminated food or water 	<ul style="list-style-type: none"> Bacillary dysentery/Shigellosis 	<ul style="list-style-type: none"> Ciprofloxacin or azithromycin 	<ul style="list-style-type: none"> Protection of water and food supplies Vaccines are in trial stage 	<ul style="list-style-type: none"> Culture on Hektoen agar or other media for intestinal pathogens
35	Staphylococcus aureus	<ul style="list-style-type: none"> Human flora on mucosae in e.g. anterior nares and vagina, entering through wound 	<p>Coagulase-positive staphylococcal infections:</p> <ul style="list-style-type: none"> Localized skin infections Diffuse skin infection (Impetigo) Deep, localized infections Acute infective endocarditis Septicemia Necrotizing pneumonia Toxinoses <ul style="list-style-type: none"> Toxic shock syndrome Staphylococcal food poisoning 	<ul style="list-style-type: none"> Incision and drainage of localized lesions Nafcillin and oxacillin Vancomycin for Methicillin-resistant (MRSA) 	<p>(no vaccine or preventive drug)</p> <ul style="list-style-type: none"> Barrier precautions, washing hands and fomite disinfection in hospitals 	<ul style="list-style-type: none"> Microscopy showing strongly positive Gram stained cells in grape-like clusters Positive Catalase test and coagulase test Culture on enriched media producing deep yellow, hemolytic colonies
36	Staphylococcus	Human flora in skin and	<ul style="list-style-type: none"> Infections of implanted prostheses, e.g. heart 	<ul style="list-style-type: none"> Vancomycin 	None	<ul style="list-style-type: none"> Microscopy showing strongly positive Gram stained cells in grape-like clusters Positive Catalase test but negative coagulase test Novobiocin-sensitivity (S.

	epidermidis	anterior nares	valves and catheters			epidermidis) <ul style="list-style-type: none"> Novobiocin-resistance (<i>S. saprophyticus</i>) Culture on enriched media producing white, nonhemolytic colonies
37	<i>Staphylococcus saprophyticus</i>	Part of normal vaginal flora	<ul style="list-style-type: none"> Cystitis in women 	<ul style="list-style-type: none"> Penicillin G 	None	
38	<i>Streptococcus agalactiae</i>	Human flora in vagina or urethral mucous membranes, rectum <ul style="list-style-type: none"> Vertical transmission by birth Sexual 	<ul style="list-style-type: none"> Meningitis and septicemia in neonates Endometritis in postpartum women Opportunistic infections with septicemia and pneumonia 	<ul style="list-style-type: none"> Penicillin G Ampicillin Aminoglycoside in case of lethal infection 	None	<ul style="list-style-type: none"> Culture showing large colonies with β-hemolysis Negative catalase test Hydrolyzes sodium hippurate
39	<i>Streptococcus pneumoniae</i>	<ul style="list-style-type: none"> Respiratory droplets Often human flora in nasopharynx (spreading in immunocompromised) 	<ul style="list-style-type: none"> Acute bacterial pneumonia & meningitis in adults Otitis media and sinusitis in children 	<ul style="list-style-type: none"> Penicillin G Vancomycin for resistant strains 	<ul style="list-style-type: none"> 23-serotype vaccine for adults (PPV) Heptavalent conjugated vaccine for children (PCV) 	<ul style="list-style-type: none"> Microscopy showing gram-positive, encapsulated lancet-shaped diplococci α-hemolysis on blood agar, bile-soluble, optochin-sensitive Positive Quellung reaction
40	<i>Streptococcus pyogenes</i>	<ul style="list-style-type: none"> Respiratory droplets Direct physical contact with impetigo lesions 	<ul style="list-style-type: none"> Streptococcal pharyngitis Scarlet fever Rheumatic fever Impetigo and erysipelas Puerperal fever Necrotizing fasciitis 	<ul style="list-style-type: none"> Penicillin G Macrolide, e.g. clarithromycin or azithromycin in penicillin allergy Drainage and debridement for Necrotizing fasciitis 	No vaccine <ul style="list-style-type: none"> Rapid antibiotic treatment helps prevent rheumatic fever 	<ul style="list-style-type: none"> Culture on sheep blood agar forming small, opalescent surrounded by large zone of β-hemolysis Serology for ASO Very bacitracin-sensitive
41	<i>Treponema pallidum</i>	<ul style="list-style-type: none"> Sexual 	<ul style="list-style-type: none"> Syphilis Congenital syphilis 	<ul style="list-style-type: none"> Penicillin G Erythromycin or tetracycline if penicillin allergy 	No preventive drug or vaccine <ul style="list-style-type: none"> Safe sex Antibiotics to pregnant women at risk of transmitting congenital syphilis 	Cannot be cultured or viewed in gram-stained smear <ul style="list-style-type: none"> Dark field microscopy Serology, including nontreponemal (VDRL, RPR) and treponemal tests (FTA-ABS, TPI, TPHA)
		<ul style="list-style-type: none"> Contaminated water 		<ul style="list-style-type: none"> Fluid and electrolyte replacement 	<ul style="list-style-type: none"> Preventing fecal contamination of water supplies 	<ul style="list-style-type: none"> Culture on blood or MacConkey agar,

42	Vibrio cholerae	and food, especially raw seafood	<ul style="list-style-type: none"> • Cholera 	<ul style="list-style-type: none"> • e.g. doxycycline to shorten duration 	and food <ul style="list-style-type: none"> • Adequate food preparation 	<ul style="list-style-type: none"> enhanced by TCBS • Positive oxidase test
43	Yersinia pestis	<ul style="list-style-type: none"> • Fleas from animals • Ingestion of animal tissues • Respiratory droplets 	Plague: <ul style="list-style-type: none"> • Bubonic plague • Pneumonic plague 	<ul style="list-style-type: none"> • Streptomycin primarily • Gentamicin • Tetracyclin • Supportive therapy for shock 	<ul style="list-style-type: none"> • Formalin-killed plague vaccine • Minimize exposure to rodents and fleas 	<ul style="list-style-type: none"> • Gram-negative smear • If pneumonic, culture from aspirate on MacConkey or blood agar

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