Omar Debas

	Streptococcus pneumoniae	Klebsiella pneumoniae	Bacillus anthracus
General info.	S. Pneumonia is a Gram +ve diplococci that can undergo autolysis	Klebsiella is a Gram -ve capsulated bacilli	B. Anthracus is a Gram +ve bacilli in chains ith spores and a D-glutamate capsule
Virulence factors/ pathogenesis	S. Pneumonia as an Antiphagocytic capsule and pneumolysin (pore forming toxin)that causes a-hemolysis		B. Anthracus has a 3- domain exotoxin: protective antigen (pa); binds to receptors with proteolytic action and allows entry of: Edema factor (EF) and lethal factor (LF) which causes tissue necrosis. Antiphagocytic capsule
Clinical presentation	S. Pneuminia causes Otitis media & sinusitis and community acquired pneumonia which produces rusty sputum. bacteremia amd meningitis	Klebiella causes Nosocomial pneumonia (lobar) with abess and empyrma, "currant jelly sputum" that is bloody a mucoid. UTI and bacteremia	B. Anthracus germinates in macrophages where it produces the capsule cutaneous anthrax, pulmonary anthrax (wool sorter's disease) that isn't transmitted p2p, and causes hemorrhagic mediastinitis that ends in septic shock
Laboratory diagnosis	S.pneumonia causes alpha-hemolysis, and Quellung reaction is positive unlike S. viridans, pathogen ferments inulin, is sensitive to		In B. Anthracus, X Ray shows mediastinal widening or pleural effusion. Sputum doesn't yield positive cultures. Blood sample cultures show irregular fimbria ar. the edges (medusa heads), are non hemolytic and liquifies gelatin
Management/ treatment	For S. Pneumonia, Vaccine against the capsule, or conjugate vaccine, given to children below 2, the elderly, or immunocompromised ppl and aplenics	Klebsiella has a High degree of antibiotic resistance	For B. Anthracus, Active immunisation is given to animals only. A vaccine against the protective antigen (PA) is only given to people who are at high risk