KEY WORDS AND PHRASES FOR
BACTERIAL PATHOGENESIS AND QUORUM SENSING
CONCEPT MAP

Autoinducer/receptor complexes are able to bind to DNA promoters and activate the transcription of quorum sensing-controlled genes.

Differences in disease-causing capability between microbial species

Differences in disease-causing capability between strains of the same microbial species

Enables bacteria to co-opt the functions of host cells for their own benefit

Enables the bacterium to directly inject bacterial effector molecules into the cytoplasm of the host cell in order to alter its cellular machinery or cellular communication

Most genes coding for virulence factors in bacteria are located in pathogenicity islands or PAIs and are usually acquired by horizontal gene transfer involving conjugative plasmids.

Once *P. aeruginosa* is able to replicate and achieve a high population density, quorum sensing leads to activation virulence genes coding for exoenzyme, toxins, and formation of a biofilm.

The number of bacteria that enter the body

The production, release, and community-wide sensing of molecules called autoinducers that modulate gene expression in response to the density of a bacterial population

The quality of the person's innate and adaptive immune defenses

When *P. aeruginosa* begin to outgrow their local environment, quorum sensing enables them to turn off adhesin genes and turn on flagella genes that allow some of the bacteria to spread out of the biofilm to new location within that environment via motility.

When *P. aeruginosa* first enters the body, motility genes coding for flagella, and adhesin genes coding for pili and cell wall adhesins are expressed.