

# **Evolution of Antibiotic Resistance in Pathogens**

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Some of the strategies bacterial pathogens use to evade antibiotic drugs will be reviewed, with an emphasis on multidrug resistant *Staphylococcus aureus*. I then present the results of a new whole genome sequencing effort that compared two *S.aureus* strains that evolved in a single patient during therapy with one of the last generally effective drugs vancomycin. The bacteria evolved resistance to this drug, by an ordered series of point mutations, and in the process became resistant to another recent drug daptomycin that was never used. The genetic basis for some of these events will be discussed.