



Keynote Lecture 1.1

History of antimicrobial therapy for the past 60 years: Lessons for the future

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Since the introduction of penicillin in the 1940s, more than 100 different antimicrobial agents have been licensed for use worldwide. During the past 60 years, we have learned valuable lessons from microbes whose intent is to harm us, if not to kill us. These microbes reluctantly reveal their secrets to us about where and how they are vulnerable and how we may kill them before they kill us. Among the truths we have learned about microbes are the following:

- They have inhabited our planet for at least two billion years longer than we have.
- They are highly adaptable and are not resistant to change—quite different from their human adversaries.
- They are brilliant biochemists.
- They deploy formidable defensive and offensive forces.
- They are consummate stealth fighters.
- They are highly promiscuous.
- They form alliances with other microbes and are skilled insurgents, adept at guerrilla warfare.
- We must never underestimate them.
- Their biotechnology in many areas exceeds our own.
- They are relentless and never rest.
- They are single-minded and have a simple vision with mission statement and strategic plan.

When the rate of change within the microbial world exceeds the rate of change in the medical world, the end is in sight.