

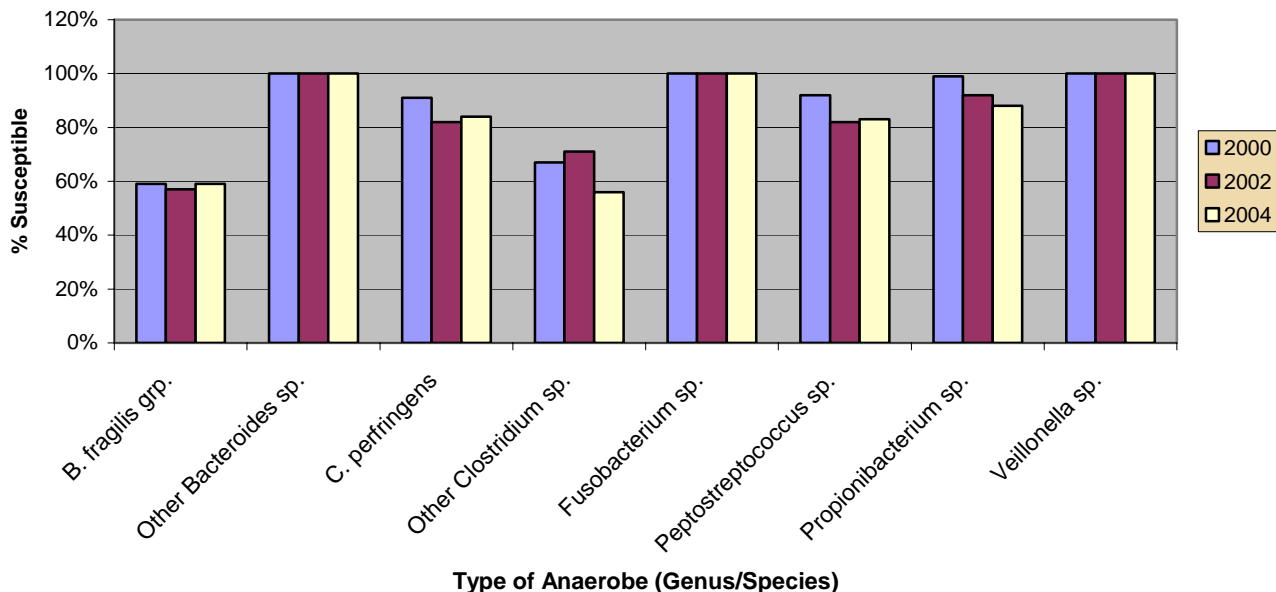
THERE ARE NO NORMAL VALUES IN MICROBIOLOGY!  
AN IMPROPERLY COLLECTED SPECIMEN MEANS UNINTERPRETABLE RESULTS!

## 5-Year Antibigram Trending for Invasive Anaerobes –Calgary Health Region (2000-2004)

Although CLS Microbiology compiles and publishes an annual antibiogram for the Calgary Health Region (CHR), antibiotic susceptibility data on invasive anaerobes has not been included. This newsletter provides a 5-year trending of the antibiotic susceptibility patterns for major types of anaerobes isolated from blood cultures and sterile body fluids from 2000-2004. Antibiotic susceptibility data is provided for the three main drugs (clindamycin, metronidazole and penicillin) that are routinely tested on invasive anaerobes from these sites. Data is not provided for anaerobic genera that are infrequently isolated.

- 1) **Clindamycin:** **Figure 1** outlines the trend in antibiotic susceptibility for this drug for the most commonly isolated medically important genera of anaerobic bacteria.

Figure 1. Clindamycin Susceptibility of Invasive Anaerobes - Calgary Health Region (CHR) (2000-2004)



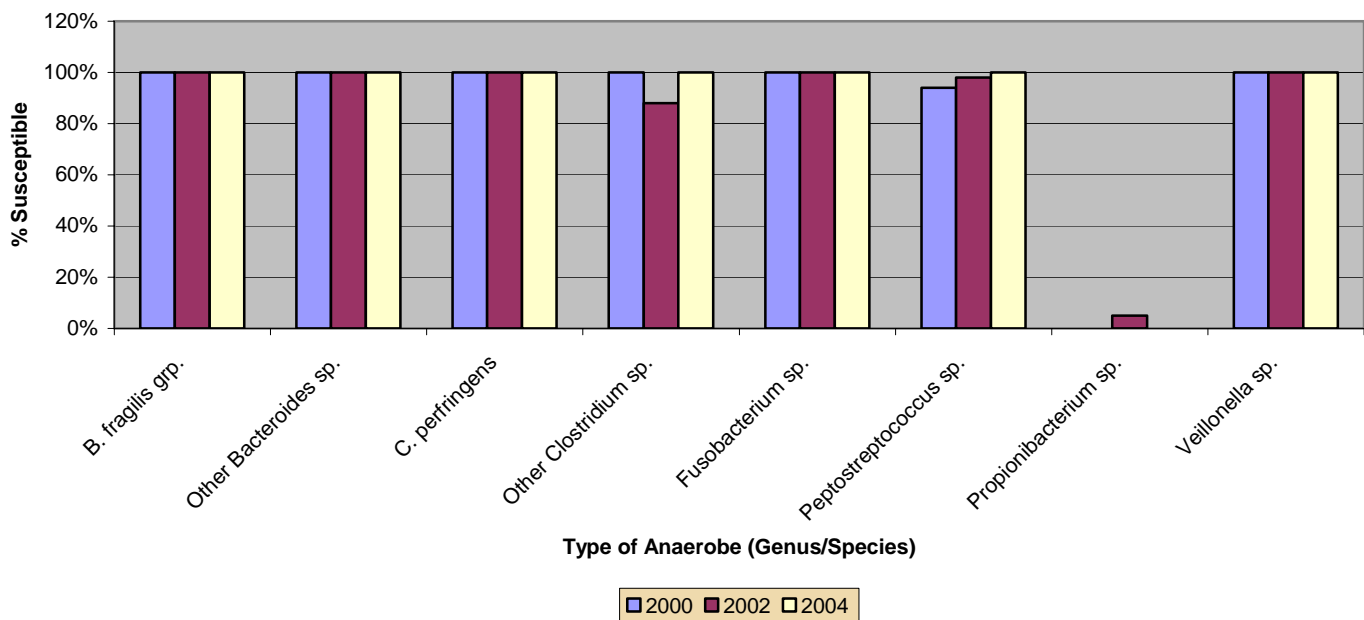
Important trends in invasive anaerobe resistance to clindamycin include:

- ~40% resistance of *B. fragilis* grp. Isolates
- Increasing resistance of *C. perfringens* (~20%) and other *Clostridium* sp. (~40%)
- Increasing resistance of *Peptostreptococcus* sp.
- Increasing resistance of *Propionibacterium* sp. that are mainly *P. acnes*

Although a small number of *Prevotella* sp. isolates (<10) were tested in each year of the study, this genera remains clindamycin sensitive. Actinomyces have variable susceptibility patterns depending on the species.

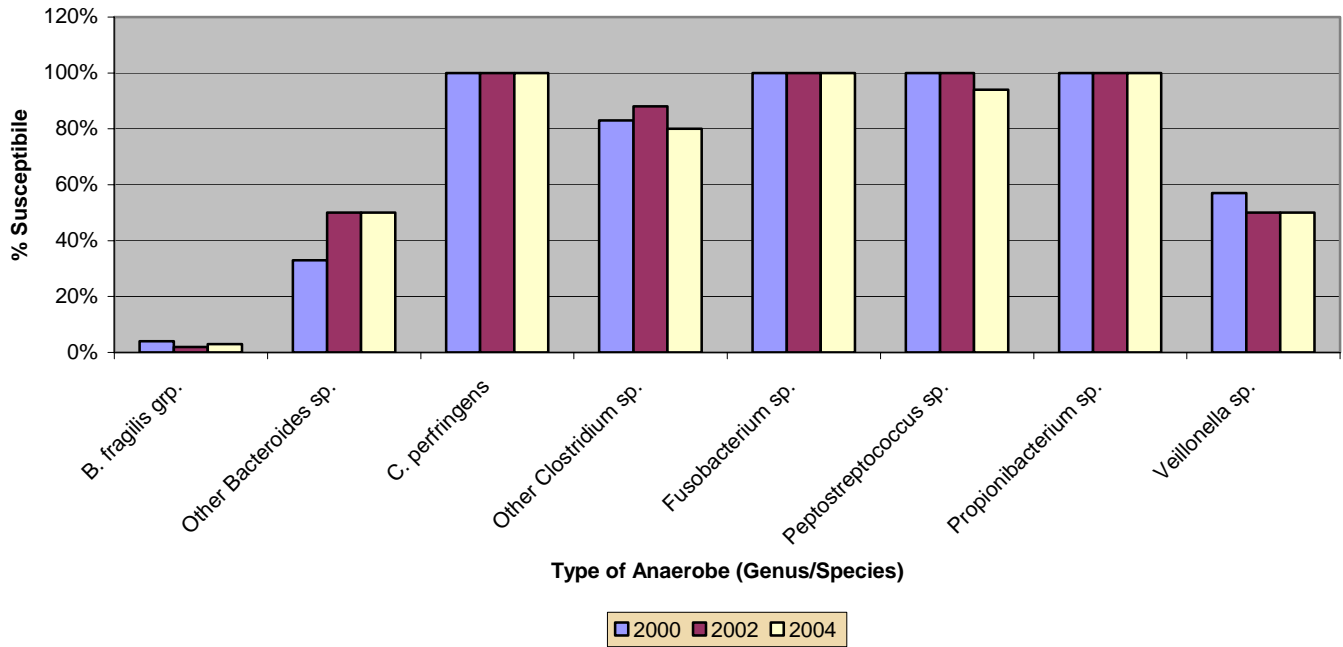
2) **Metronidazole:** Figure 2 outlines the trend in antibiotic susceptibility for this drug for the most commonly isolated medically important genera of anaerobic bacteria. For the most part, metronidazole resistance amongst various genera is a stable, intrinsic characteristic that is not acquired. Due to the mechanism of action of this important drug (1), it is anticipated that major resistance will not develop in specific general such as *Clostridium* sp., and will develop slowly in others (i.e., *Bacteroides* sp, *Prevotella* sp.).

Figure 2. Metronidazole Susceptibility for Invasive Anaerobe Isolates - Calgary Health Region (CHR) (2000-2004)



3) **Penicillin:** Figure 3 outlines the trend in antibiotic susceptibility for this drug for most of the commonly isolated medically important genera of anaerobic bacteria. Resistance to penicillin has rapidly developed in several major anaerobe groups due to the acquisition of  $\beta$ -lactamases (i.e., *Bacteroides* sp.).

Figure 3. Penicillin Susceptibility of Invasive Anaerobe Isolates - Calgary Health Region (2000-2004)



**IF YOU HAVE ANY QUESTIONS OR COMMENTS ABOUT HOW THE LABORATORY WORKS,  
PLEASE CALL US AT 770-3396 (Brenda Kirkham, Manager, Microbiology) or  
770-3281 (Dr. Church, Division Head, Microbiology)**