Antibiotics Effectiveness Against Bacterial Infection Antibiotic Context Penicilin Streptomycin Neomycin After World War II, antibiotics were 5,000 Total: 3,486.05 considered "wonder drugs," since they were an easy remedy for what had been 2,000 intractable ailments. To learn which drug worked most effectively for which bacterial 1,000 infection, the performance of the three most 500 popular antibiotics on 16 bacteria were gathered. The minimum inhibitory Average: 217.88 200 concentration (MIC) is a measure of the effectiveness of the antibiotic, which 100 Total: 65.43 represents the concentration of antibiotics Total: 49.04 required to prevent growth in vitro. 50 20 10 Relative MIC Needed Average: 4.09 Least (Most Effective) Average: 3.07 Middle Most (Least Effective) This score compares an antibiotic's performance against the others. An 0.5 antibiotic is more effective if it needed the least concentration (MIC) for a specific 0.2 bacteria compared to the other two 0.1 antibiotics. 0.05 0.02 Gram-Staining 0.01 negative positive 0.005 **Gram Staining** 0.002 X negative ✓ positive 0.001 0.0005 $\bullet \hspace{0.2em} \triangleright \hspace{0.2em} + \hspace{0.2em} \triangle \hspace{0.2em} \triangleleft \hspace{0.2em} \triangledown \hspace{0.2em} \bullet \hspace{0.2em} \square \hspace{0.2em} * \hspace{0.2em} \star \hspace{0.2em} \triangleright \hspace{0.2em} \square \hspace{0.2em} * \hspace{0.2em} \square \hspace{0em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0em} \square \hspace{0.2em} \square \hspace{0.2em} \square \hspace{0em} \hspace{0em} \square \hspace{0e$ **▼ ♦** ▲ ◆ ● ▽ □ < ◆ ▲ ▼ Bacteria Bacteria ■ Aerobacter aerogenes Least (Most Effective) + Brucella abortus * Brucella anthracis ♦ Diplococcus pneumoniae Middle < < < < </p> ▲ Escherichia coli **▼** Klebsiella pneumoniae Most (Least Effective) \times \times \times \times \times \times \checkmark ➤ Proteus vulgaris Pseudomonas aeruginosa 10 10 ■ Salmonella (Eberthella) typhosa 8 ♣ Salmonella schottmuelleri Relative MIC Cou ■ Staphylococcus albus ★ Staphylococcus aureus ◆ Streptococcus fecalis ▲ Streptococcus hemolyticus 2 ▼ Streptococcus viridans Least Middle Most Least Middle Most Least Middle Most