HIGHLIGHTS OF PAST U.S. RESPONSE TO ANTIMICROBIAL RESISTANCE

- July 6, 1945 – the **Penicillin Amendment** is enacted establishing section 507 of the Food, Drug and Cosmetic Act introducing new certification standards to ensure safety and efficacy of penicillin which, at the time, suffered from inconsistencies in stability and potency from batch to batch.

- 1962 – FDA statute is amended to require certification of any other antibiotic drug (expands beyond penicillin).

- 1982 – FDA determines certification of antibiotics is no longer necessary and exempts antibiotics from certification.

- September 1995, Congressional **Office of Technology Assessment (OTA)** examined the problem of antimicrobial resistance in a report requested in the 103rd Congress by Chairman Dingell (D-MI) and Chairman Kennedy (D-MA): **"Impacts of Antibiotic-Resistant Bacteria."** The report stated that *"The impacts of antibiotic-resistant bacteria can be reduced by preserving the effectiveness of current antibiotics through infection control, vaccination and prudent use of antibiotics, and by developing new antibiotics specifically to treat infections caused by antibiotic-resistant bacteria."*

- November 21, 1997, the **Food and Drug Administration Modernization Act (FDAMA)** is enacted and codified initiatives include measures to modernize the regulation of biological products by bringing them in harmony with the regulations for drugs and eliminating the batch certification and monograph requirements for insulin and antibiotics. As part of this process, FDAMA eliminated section 507 and clarified that antibiotics should be reviewed like other drugs under section 505.

- January 1998, **Institute of Medicine (IOM)** report, **"Antimicrobial Resistance: Issues and Options."** The report was based on workshops that reported that "most critical issues concern the expansion, coordination, and improvement of the diverse elements of surveillance. There are also key areas where thoughtful investments could make a difference in what is known and what can be done about antimicrobial resistance in research, clinical management and practice and policy."

- April 1999, **GAO Report, "Antimicrobial Resistance: Data to Assess Public Health Threat From Resistant Bacteria Are Limited."** (Requested by Sens. Kennedy (D-MA) and Harkin (D-IA)) The GAO concluded that, *"The development and spread of resistant bacteria worldwide and the widespread use of various antibacterials create the potential for the U.S. public health burden to increase. Data indicate that resistant bacteria are emerging around the world, that more kinds of bacteria are becoming resistant, and that bacteria are becoming resistant to multiple drugs."*

- In the 106th Congress, Sens. Kennedy (D-MA) and Frist (R-TN) and Reps. Burr (R-NC) & Stupak (D-MI) introduced S. 27312/H.R. 4964, the **"Public Health Threats and Emergencies Act."** Parts of this bill became law (P.L. 106-505) and provide the basis of the Strategies To Address Antimicrobial Resistance (STAAR) legislation. Specifically, that bill, which is expressed in **Section 319E, "Combating Antimicrobial Resistance"** of the Public Health Service Act, directed the Secretary to establish an Antimicrobial Resistance Task Force to coordinate Federal programs relating to antimicrobial resistance. Also, the bill required research and development of new antimicrobial drugs

and diagnostics; educational programs for medical and health personnel in the use of antibiotics; and grants to establish demonstration programs promoting the judicious use of antimicrobial drugs and the detection and control of the spread of antimicrobial-resistant pathogens. Authorization for these programs expired September 30, 2006.

- January 2001, **"A Public Health Action Plan to Combat Antimicrobial Resistance, Part I: Domestic Issues"** was published by the Interagency Task Force on Antimicrobial Resistance. The Action Plan identified thirteen key elements (out of 84 elements) as "top priority" action items that are critically necessary to address the growing resistance crisis.

- May 2001, only months after the release of the Public Health Action Plan, many Energy and Commerce Committee members joined Rep. Sherrod Brown (D-OH) (including Reps. Waxman, Dingell, Pallone, Towns, Green, and DeGette) in introducing H.R. 1771, the **"Antibiotic Resistance Prevention Act of 2001.**" This legislation sought to provide additional funding (i.e., "such sums as necessary") specifically for the "top priority" action items in the Action Plan. The bill recognized the urgency of this situation and explained that "The Institute of Medicine, the American Society for Microbiology, the World Health Organization, the Congressional Office of Technology Assessment, and the General Accounting Office each have found that the Nation should improve surveillance for mounting antimicrobial resistance problems; prolong the useful life of antimicrobial drugs; develop new drugs; and utilize other measures, such as improved vaccines, diagnostics, and infection control measures, to prevent and control antimicrobial resistance."

- In 2004, the Infectious Diseases Society of America (IDSA) published, ***"Bad Bugs, No Drugs: As Antibiotic Discovery Stagnates a Public Health Crisis Brews"*** to highlight the lack of research and development for new antibiotics. Antibiotics are not profitable compared to those that treat chronic (long-term) conditions and lifestyle issues. In addition, when a new antibiotic comes on the market, it is discouraged from use to avoid the development of resistance. Also, antibiotics are taken for short periods of time – unlike those for chronic disease which may be taken daily. As a result, big pharmaceutical companies have pretty much turned their back on antibiotic development.

- In the 109th Congress, Sens. Burr (R-NC), Kennedy (D-MA), Enzi (R-WY), Harkin (D-IA) & Gregg (R-NH) and Reps. Rogers (R-MI), Eshoo (D-CA), Barton (R-TX) and Dingell (D-MI) included ***naturally occurring infectious diseases*** in the definition of a material threat in the **"Pandemic and All-Hazards Preparedness Act,"** which became law [P.L. 109-417].

- In the 109th and 110th Congresses, Reps. Baird (D-WA), Cubin (R-WY) and Matheson (D-UT) introduced legislation to provide tax credits and other incentives for antibiotic research and development, as well as to encourage that antibiotics, vaccines, and diagnostics become more commonly manufactured in the United States. **[H.R. 1496, the "Beating Infections through Research and Development (BIRD) Act" in the 110th]**

- April 2007, Sens. Hatch (R-UT), Brown (D-OH), Alexander (R-TN), Dodd (D-CT), Burr (R-NC) and Obama (D-IL) offer an amendment to encourage antibiotic development

during consideration of the **FDA Revitalization Act** (S. 1082). Chairman Kennedy (D-MA) and Sen. Enzi (R-WY) accept the amendment and it is included in the Manager's Amendment.

- June 2007, Rep. Matheson (D-UT) offers an antibiotic incentive amendment during committee consideration of the **FDA Amendments Act** (H.R. 2900). The amendment was accepted along with another by Rep. Cubin (R-WY) related to antibiotic clinical trial guidances.

- September 2007, Reps. Matheson (D-UT) and Ferguson (R-NJ) introduce H.R. 3697, the **Strategies to Address Antimicrobial Resistance Act** (STAAR Act).

- November 2007, Sens. Brown (D-OH) and Hatch (R-UT) introduce S. 2313, companion legislation to the **Strategies to Address Antimicrobial Resistance Act** (STAAR Act).

- In December 2007, the Interagency Task Force on Antimicrobial Resistance held a stakeholder meeting in Atlanta to revise the Federal Action Plan. As of June 2010, the revised plan has not been released.

- On August 14, 2008, President Bush signed the **Animal Drug User Fee Amendments of 2008** (ADUFA). Within this legislation, FDA was given limited authority to require manufacturers to submit an annual report on the amount of each antimicrobial active ingredient in the drug that is sold or distributed for use in food-producing animals.

- May 14, 2009, Rep. Matheson (D-UT) reintroduces **STAAR Act** in House, H.R. 2400.

- In November 2009, President Obama and the European Union President, Swedish Prime Minister Reinfeldt, agreed to form a Trans-Atlantic Task Force on Antimicrobial Resistance to focus on appropriate therapeutic use of antibiotics in the medical and veterinary communities, prevention of both health care- and community-associated drug-resistant infections, and strategies for improving the pipeline of new antibiotics. The first meeting of the Task Force is set for June 14-15, 2010.

- March 23, 2010, (not antibiotic-specific) **The Patient Protection and Affordable Care Act** is enacted and includes: (1) section 3008 which would adjust hospital payments for hospital acquired infections, (2) section 9023 that provides a tax credit equal to 50% of investments in "qualifying therapeutic discovery project", and (3) section 10409 which establishes the Cures Acceleration Network or CAN to award grants and contracts to accelerate the development of high need cures, including the development of medical products and behavioral therapies.

- In spring of 2010, the United States Government Accountability Office (GAO) is performing two investigations around antimicrobial resistance. The first was requested by the House Rules Committee and is looking at the effects that antibiotic use in food animals has on resistance. The second was requested by the House Agriculture Committee and is considering the methods used by the Department of Health and Human Services to monitor antibiotic resistance in humans.