Animal Health, Food Safety and Epidemiology
A USDA Multi-Agency Program

Background: Despite significant producer interventions, on-going research efforts and continued surveillance, food borne outbreaks continue to occur. Furthermore, the emergence of multiple antimicrobial resistant food borne bacteria have amplified public concerns. A multi-agency Public Health Action Plan has been developed to address these concerns. Although USDA has been a full participant in this Action Plan, USDA to date has not developed an independent program which deals with antimicrobial research and surveillance issues.

Rationale for developing a program headed by USDA: The USDA is uniquely poised to implement a comprehensive program addressing animal health and food safety issues including those attributable to antimicrobial resistant bacterial pathogens. USDA staff are uniquely trained to conduct and manage on-farm and food related issues and have developed critical partnerships with both the food animal industry and consumers. Execution of CAHFSE (pronounced calves) will enhance and expand projects already directed at on-farm issues (APHIS), antimicrobial resistance (ARS), and HACCP compliance monitoring (FSIS) enabling USDA to reliably track both emerging animal diseases and zoonoses within the food animal population which may affect the food supply and impact public health.

Objective: To implement and expand a surveillance system patterned after the APHIS National Animal Health Monitoring System (NAHMS) which focuses on animal health and food safety issues.

Program outline: Samples (fecal, feed or other), will be collected from sentinel farms and slaughter facilities throughout the US. Sentinel sites would be representative of production/slaughter within a particular commodity. Herd health/management data and samples would be collected from sentinel sites and processing plants four times per year. Initially samples will be cultured for *Salmonella, Campylobacter, E. coli* and *Enterococci*, (zoonotic and commensal bacteria). However, once the sample is collected, culture of any bacterium or virus of concern is possible. Quarterly visits and sampling will permit continual tracking of changes in herd health and allow flexibility to address additional issues and emergence of new diseases. Management data will allow the identification of risk factors and provide data for continual risk assessment. Research will enable timely development of interventions. APHIS will lead the on-farm efforts for sample collection and data and risk factor analysis. ARS will lead the research efforts with expertise in pathogenesis, development of intervention strategies, and molecular and phenotypic characterization of isolates. FSIS will lead the in-plant efforts for sample collection, data analysis, and risk assessment. All three agencies will participate in study design, development of culture methodology and the animal aspect of NARMS-EB, which becomes integrated into CAHFSE. Industry input will be solicited for study priorities, design and implementation. The first commodity selected for study will be pork with initial sampling to take place in 2003. Expansion beyond sampling 25 sentinel sites for swine and/or the addition of other commodities will be added based on industry interest and funding.

Initial funding/staffing will originate from existing monies allocated to the Antimicrobial Resistance Research Unit (ARS), the NAHMS Program (APHIS), and the HACCP Program (FSIS).

Expected Outcomes and Benefits: CAHFSE will enable USDA to identify and track emerging diseases and identify and implement mitigation strategies in a timely manner thereby averting economic, animal health, and public health consequences. Further, it will provide comprehensive science based answers regarding animal health and public health and will serve as a model for future surveillance efforts on a national level.

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