

## PUBLIC HEALTHWORKER SAFETY

**Title:** Assessment of alternatives for monitoring antimicrobial use in the swine industry and design and implementation of a pilot system (#15-186)

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### Scientific Abstract:

The current crisis of antimicrobial resistance in human medicine has brought calls for improved antibiotic stewardship in all prescribing professions. Improved measurement of ABU is a universal component of improving stewardship. This project focused specifically on measurement of antibiotic use in the US swine industry. The initial objectives were to assess potential metrics of ABU in swine, and current sources of data and record keeping systems that could yield ABU data at relatively low cost. A further goal was to develop a framework to protect confidentiality of cooperating producers who might voluntarily share ABU data as part of a collaborative industry effort. An extensive review was conducted of systems to measure ABU that have been used previously in either research of surveillance settings in other countries, with the goal of designing and then implementing a pilot project to obtain ABU data in the US industry. In September 2016, the project was superseded by an extended (5 year) FDA funded project that was enabled by the activities undertaken in this NPB project.

To guide the design of a pilot project to obtain ABU data, initial activities involved industry communications and discussions centered on a task force convened by the NPB. Key issues identified were recognition of the deficit of knowledge about current ABU practices across the industry, prioritization of ABU in the breeding vs. growing phases of the industry, the need to further define appropriate metrics, and issues of confidentiality and handling of data. Based on these discussions, the scope of the initial year under the FDA project was to collect data on ABU in growing pigs (weaning to market) for the 2016 calendar year from a convenience sample of production systems that will voluntarily share data. Retrospective data are being obtained at a system level by product (both medically important and not medically important) and stratified by route (feed, water, injection) and where feasible by phase (e.g., nursery, finishing, wean-to-finish). These data will provide relatively coarse estimation of ABU, but still yield substantially more information than is currently available about ABU use in US swine.

Seventeen systems were contacted and or/visited and 11 (representing over 20% of national pig production) have agreed to provide the data requested. A process for managing data confidentially has been established, 4 systems have submitted data, and the remaining systems are expected to submit data over the next month. Initial reporting of summary data will occur among participants as soon as the data have been aggregated and analyzed. The next phase of the project will be to repeat the data collection for the 2017 year, and report the aggregate data for both 2016 and 2017 for the FDA is projected in the fall of

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These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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2018. It is hoped that release of summary data to other industry stakeholders will occur prior to the FDA report but will be contingent on agreement of the participants. For all participants to date, no retrospective data are available on the purpose or details of administration (route, dose, duration). Obtaining data on these important aspects is a priority for the next phase of the work.