

## Take Care – Use Antibiotics Responsibly Swine Practitioner Project

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### Abstract

The Take Care – Use Antibiotics Responsibly<sup>®</sup> program is an antimicrobial resistance and use education and awareness program for pork producers. The program is based on principles and guidelines intended to minimize the development of antimicrobial resistance while maximizing animal health. The program was developed by the National Pork Board, but veterinarians are key in the delivery of the program on farm. Since there are many factors that contribute to the amounts and types of antimicrobials used on farm it was decided that the best way to measure program effectiveness was through measurement of changes in the attitude and behaviors of program participants.

Ten veterinary clinics were selected to participate in the Take Care swine practitioners' pilot project. The practitioners were trained by the project managers and Pork Board staff and were provided brochures and PowerPoint presentations to use with their clients. They formally delivered education about the program and worked to implement it on farm with three clients (treatment group). Additionally they selected two other clients who did not receive the training (control group) to survey. Surveys were developed by industrial psychologists to objectively measure attitudes and behaviors related to antimicrobial use on farm. The surveys were administered to all producers at the beginning and end of the project. The treatment group was also surveyed shortly after going through the education and training. Analysis of the survey data is underway and results will be given in the oral presentation at SafePork 2007.

### Introduction

The Take Care – Use Antimicrobials Responsibly program was developed by the National Pork Board with input from veterinary, allied industry, regulatory agencies, and public health agencies. The goal of the program is to educate pork producers on the importance of using antimicrobials responsibly and to provide them with principles and guidelines for antimicrobial use that will allow them to protect public health while maximizing animal health and welfare. The basis for using antimicrobials responsibly during pork production involves evaluating their use to protect animal health, optimize effectiveness, and minimize the risk of developing antimicrobial resistance, thereby protecting public health. Swine practitioners are vital in delivery and implementation of the program on farms.

Because there are not adequate surveillance programs within the pork industry in the United States to provide data regarding the amounts of antimicrobials used it was decided that the effectiveness of the program could best be determined by attempting to measure changes in attitudes and behaviors of pork producers participating in the Take Care program. Since the education about the program is largely delivered by the veterinary practitioner a pilot project with swine veterinarians was initiated. The objectives of the Take Care swine practitioners' project were: Provide training to veterinary clinics on the Take Care program and provide support so that these clinics could help their clients implement the program, to develop a statistically valid instrument that measured attitudes and behaviors about antimicrobial use on farm, and to

summarize the clinics' reports, analyze the data and make recommendations for wider implementation of the Take Care program

## Materials and Methods

A team of industrial psychologists developed a survey instrument to objectively measure attitudes and behaviors regarding antimicrobial use and resistance. The survey also collected data on the job responsibilities of the production workers surveyed. Answers were ranked on a scale, rather than as yes or no, to provide more measurements. Questions included information on: Swine herd health, response to health problems, knowledge of animal health products, knowledge and beliefs concerning antimicrobial resistance, factors used to decide on antimicrobial use, feed grade antimicrobial use, water delivered antimicrobial use, injectable antimicrobial use, and antimicrobial inventory. Completed questionnaires were returned to the industrial psychology program for data input and analysis.

Ten swine practitioners in five Midwestern states were selected to participate in the program. They underwent a training session with the project managers and National Pork Board staff about the program elements. They were provided with manuals, brochures, and a PowerPoint presentation for use in their producer training sessions. Additionally, they were encouraged to develop clinic or farm specific materials if they felt that would be beneficial. Each practitioner then presented the Take Care program to three producers (treatment group). A survey was given to the treatment group producers prior to, and following their training on the program. Additionally, prior to the end of the pilot project the practitioners were encouraged to refer to the Take Care principles and guidelines during the interactions with their clients regarding antimicrobial use. Two additional producers (control group) within the practice clientele were surveyed but not provided individualized training on the program. Follow-up surveys of both treatment and control group producers were administered approximately nine months following the initial survey.

## Results

Nine of the ten practitioners completed the entire project. The number of farms completing surveys is listed in Table 1, however all Time 3 surveys were not completed at the time this paper was submitted. The number of individual surveys is presented in Table 2. The reduction in numbers of farms surveyed between Time 1 and Time 2 was largely due to the withdrawal of one practitioner from the project. The number of individuals surveyed was also reduced due to the withdrawal of the one practitioner, as well as employee turnover on some of the farms. Results of the analysis of the surveys will be presented during the oral presentation at the SafePork 2007.

Table 1: Number of participating farms responding to surveys

	Time 1	Time 2	Time 3 (Not complete at time of publication)
Control	29	25	15
Treatment	30	29	20

Table 2: Number of surveys (individuals)

	Time 1	Time 2	Time 3 (Not complete at time of publication)
Control	80	73	47
Treatment	136	125	23

A video DVD of interviews with the swine practitioners has been developed to help demonstrate to other veterinary practitioners the value of participation in the Take Care program. Resource materials that the practitioners have developed during their implementation of the program on farm will be made available to all practitioners interested in delivery of the program to their clientele. Concerns or comments expressed by the practitioners will be considered for incorporation into subsequent versions of the program.

## Discussion

With the current US regulatory structure it is difficult to accurately measure antimicrobial use on swine farms. In addition, factors other than attitude about antimicrobial use, such as changes in animal health status, impact the amounts and types of antimicrobials used by pork producers. Because of this, it was decided that program effectiveness of an education and awareness program is best measured by measuring changes in attitude and behavior. Measurements at different time intervals can help measure the permanence of any observed attitude changes. By involving the discipline of industrial psychology we were able to develop a survey instrument that will objectively measure those attitudes and behaviors. Information learned by analysis of these trends will be presented during the oral presentation.

Having veterinarians champion the program was helpful in providing credibility to the program from the producer's viewpoint, as well as providing the practitioners a platform upon which to base their recommendations. As an example, by providing an overview of the extra-label drug use regulations as part of the Take Care program the practitioners were able to demonstrate to their clients that their instructions were founded not only on science but also under regulatory oversight. Participation in the project generally helped the practitioner to better understand the program and see value to their business and to their clients from participation with the Take Care program. It is expected that they will convey that attitude and information to their peers in swine veterinary medicine.

## Conclusions

The Take Care swine practitioner program provided a format to judge the effectiveness of the awareness and education provided by the Take Care – Use Antibiotics Responsibly program. It did not measure changes in antimicrobial use on farm, nor in antimicrobial sensitivity patterns of bacteria isolated from the farms. However, the project did provide an objective measurement of producer attitudes and behaviors regarding antimicrobial resistance and use. By involving influential practitioners in the project it is expected that their participation will encourage other veterinarians to become more involved in program delivery on farm.