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**2007 – 2008 Florida Schools Get Smart: Know When Antibiotics Work
Program Summary**

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The Florida Department of Health established the Get Smart program through a national campaign by the Centers for Disease Control and Prevention (CDC), funded by the Epidemiology and Laboratory Capacity (ELC) Grant for Antibiotic Resistance. For the 2007 – 2008 school year, the Florida Schools Get Smart: Know When Antibiotics Work program was implemented for the first time by Dr. Sonia Clavijo-McNelis. Data from the 2006 Behavioral Risk Factors Surveillance System (BRFSS) was used to emphasize the importance of this program and to develop and disseminate information to the school community through school nurses.

A pre-implementation survey was conducted in May 2007 for school nurses to determine the knowledge, attitude, and perception of antibiotic use and antibiotic resistance of students, parents, teachers, and staff. This survey was sent out to over 400 Florida schools with 332 respondents, which included elementary, middle and high schools. This survey was used to create the program goals and a plan of action. The goals were:

1. To promote appropriate use of antibiotics among the school community.
2. To increase parental knowledge of appropriate antibiotic use in efforts to decrease the demand for antibiotics for viral upper respiratory infections.
3. To increase adherence to prescribed antibiotics.

Of the 332 pre-implementation respondents, the survey showed that 48% of elementary, 50% of middle, and 52% of high school nurse respondents said it would be very useful to receive information or education on antibiotic use and antibiotic resistance. Also, 40% of respondents indicated that it was important for students, staff, and teachers to participate in this educational campaign. Fifty percent of respondents stated that it was very important for parents to participate in the program. The results of this survey validated the importance of program implementation.

The program was created to educate school nurses and to provide them with the necessary tools for implementation that included an informational booklet, training sessions, brochures, posters, flyers, and postcards. This was put in effect during a 12 week period between September and November 2007. During this time, school nurses were instructed to log the time students, staff, or teachers came to the health room with a respiratory tract infection. They were also encouraged to offer the program materials to students, parents, teachers and staff about colds, the flu, and viral infections. In addition, Dr. Sonia Clavijo-McNelis conducted nurse training sessions that were held in person and phone conference settings during September 2007. Two continuing education credits (CEUs) were awarded to 71 school nurses who participated in these training sessions. School nurses were also provided with websites and other resources to find information on antibiotic resistance. The program was scheduled to be evaluated near the end of the implementation period.

To assess the effectiveness of the program, the program evaluation had to be completed by a mid-November deadline, according to the initial program timeline. However, there was a shift in employment and program duties were delayed. On May 7, 2008, the program was continued in order to complete the final steps of implementation. The evaluation and post implementation

survey were mailed out together to all 332 pre-implementation survey respondents. It was important to complete the process in order to evaluate the successes and possible failures of Get Smart program. The evaluation examined the process of material distribution, implementation duration, and communication with students and parents about antibiotics issues. The questions on the post implementation survey were the same as pre-implementation survey. The deadline for the completion of both items was June 13, 2008.

Findings:

There were 29 responses to the 332 evaluations and post implementation surveys mailed out in May 2008. This was an 8.7% response rate. A sample size of 179 respondents, with a 95% confidence level and 5% margin of error, would be needed in order to make valid comparisons between the pre- and post-implementation survey data. Five surveys were sent back stating the school never received the Get Smart materials. These five schools did not fill out the evaluation or post implementation survey.

The following analysis comes from the 29 responses to the evaluation and post implementation survey.

Respondents reported an average of 517 students receiving the Get Smart materials and parents receiving an average of 236 materials. Sixteen of 29 respondents said that no parent called with questions concerning antibiotic use and antibiotic resistance on an average weekly basis. Twenty two of 29 school nurses provided education or information using the Get Smart materials. Twelve of 29 respondents found the program successful among students, staff, parents, and teachers. Fifteen of 29 respondents stated the program was supported by the school administration. Eighteen respondents reported they were unsure whether the school board supported the program.

Twenty three respondents indicated that the information they received about antibiotic use and antibiotic resistance in the nurse booklet was educational. Also, 14 respondents thought the nurse training sessions were informative and helpful. One or more Get Smart materials were distributed or displayed in the school, stated in 23 of 29 evaluations.

Other strategies that school nurses utilized in order to promote proper antibiotic use were through school TV announcements, hand washing promotion, articles in the school newsletter to parents, and placing information in school display boards. Program strengths included easy to understand and read materials, CDC website information, handouts and training booklet, and educational posters. Program weaknesses pointed out by respondents were expense in printing materials, could not rely on middle school children to take home information to parents, and students not interested. Improvements to be made consisted of distribution of information to pediatrician offices, posters related to high school students, use communication channels that students use, and mail materials to parents through the parent teacher association.

The next portion of findings is from the post-implementation survey.

Sixteen of 29 school nurse respondents were aware of an antibiotic resistant infection in students sometimes, whereas 14 of 29 respondents never knew of an antibiotic resistant infection in staff and teachers.

Below, respondents had a choice of excellent, good, fair, poor, and not applicable to answer questions about antibiotic use and practices. The level of knowledge about antibiotics among

students was poor (15 of 29); among teachers (13 of 29) and school staff (11 of 29) was good; and among parents was fair (16 of 29). It was reported that the majority of parents' understanding of antibiotic resistant infection was fair (14 of 29), how misuse of antibiotics can lead to antibiotic resistant bacteria was poor (15 of 29), and methicillin-resistant *Staphylococcus aureas* (MRSA) was fair (13 of 29).

Fifteen school nurse respondents thought that parents believe antibiotics cure all infections. Twenty four respondents felt that parents often or sometimes stop the child's antibiotic treatment when the child feels better. This same practice was observed among staff and teachers.

Measures to prevent and control infection in Florida schools such as hand washing and hygiene policies and use of hand sanitizer were reported as good by 16 respondents. Twenty six of 29 school nurses reported excellent practice for students' immunization record checks and follow up.

Conclusions and Lessons Learned:

The Get Smart program had many important goals and messages that were promoted in the school community by school nurses. The effectiveness of the implementation period was difficult to interpret because of the low response rate. These limited results, however, gave an indication of the potential to measure the Get Smart program success.

School nurse respondents liked the nurse booklet and trainings that Dr. Sonia Clavijo-McNelis put together and presented. The schools that did receive the Get Smart materials used them to the best of their ability by exploring strategies to promote proper antibiotic use and antibiotic-resistant infection prevention. This was a success on the school nurse level.

The following are program limitations and are followed by recommendations:

- Due to an interruption in program management lasting 6 months, the program had a gap in communication between schools and the project coordinator. This created a problem that directly affected the implementation process that was to last 12 weeks. By the response received, the program was extended beyond this period. In the future, there should be a permanent project coordinator to ensure program effectiveness.
- It was difficult to measure if students, parents, teachers, and school staff received the Get Smart message. The questions asked in the post-implementation survey did not accurately determine this issue. As a helpful suggestion, many nurses commented on the fact that the Get Smart program should be geared toward parents.
- It was hard to determine parental beliefs based on school nurse perceptions asked in the pre-and post-implementation surveys. A survey and educational information about antibiotics should be sent to parents in the mail directly.
- Should this program be promoted in the future, materials such as posters and flyers should have age appropriate pictures on them. The posters that were sent to middle and high schools had baby images on them. In elementary schools, these images may be more suitable.

- Budget restrictions limited the volume of production of materials. The cost of mailing big packages, bulk of multiple materials, and labor of packing and distributing was a great effort put on by the Get Smart staff. A multi-purpose brochure should be developed to make the process of organizing, packing, and mailing packages to schools less labor intensive. This brochure could be used to communicate the Get Smart campaign's message across to students and parents by including information about colds, viruses, and the flu.
- The evaluation and post-implementation survey were sent to Florida schools in the last week of May. This is often a busy time for school nurses at the end of the school year. The low response rate to the surveys may be due to the fact that school nurses did not receive it before summer vacation. This limitation could be prevented next time by sending surveys or information well in advance of school closing.
- Based on comments from school nurses, the Florida Schools Get Smart program should be promoted to parents of school children. Parent participation, as well as school nurse participation, is essential to teaching students in Florida the Get Smart message. School nurses strongly recommended sending messages to parents using newsletters and email.

Although there were many limitations, the Florida Schools Get Smart: Know When Antibiotics Work program had a positive reaction from school nurse respondents to the evaluation and post implementation survey. With school nurse comments and recommendations, the program can be enhanced to be more successful in the future.

With involvement in the "National Get Smart About Antibiotics Week" held October 6 -11, 2008, Florida has the opportunity to promote the message of proper antibiotic use and antibiotic resistance prevention. A press release will be made to the public during this week. Also, CDC Get Smart materials will be circulated to Florida schools and county health departments. There will be a display poster in the main lobby of the Florida Department of Health, too. The remaining budget for this program will be spent on a contractual employee to accomplish these events. Mailing and packaging costs of the CDC funded materials will be used as part of this budget also. With these current objectives, the Get Smart program will be promoted throughout the school and health community in an effort to decrease the amount of antibiotic resistant infections and to support the mission of the department to promote, protect and improve the health of all people in Florida.