Progress towards implementing the e-Bug Project in Poland

Anna Olczak-Pienkowska* and Pawel Grzesiowski

National Medicines Institute, Warsaw, Poland

*Corresponding author. Tel: +48-228-515203; Fax: +48-223-311564; E-mail: aniaolczak@o2.pl

The e-Bug Project provides useful educational tools that can be implemented in primary and secondary schools, and plays important role in reducing the burden of community-acquired infections. Consideration of the Polish education system and educational programmes in schools facilitated the selection of the best age groups for the implementation of e-Bug materials in Poland. The Polish version of the resources has been reviewed by a special group of experts and teachers from pilot schools. The pilot implementation is currently provided by demonstration lessons for educators and recorded as a demonstration material. The e-Bug teaching pack is a valuable resource that is useful for improving knowledge about microorganisms, hygiene and antimicrobial agents, and is aimed at pupils, teachers and parents.

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Introduction

The primary prevention measures of immunization and simple hygiene play an important role in reducing the burden caused by community-acquired infections. The evaluation of one of the educational campaigns conducted in one Polish region within the National Programme of Antibiotic Protection showed that problems of rational antibiotic therapy and antibiotic use were very important and of interest both to primary care doctors and their patients. The need to expand these educational activities was also confirmed.

Children are the main group that are susceptible to viral respiratory and gastrointestinal infections. Educational campaigns designed for medical and teaching professionals and that are also suitable for children could play an important role in combating these infections. The e-Bug Project provides such an educational tool that can be implemented in primary and secondary schools.

Education system and school resources in Poland

The e-Bug educational materials are aimed at children aged 9–16 years. The materials have been developed in two versions, one for children aged 9–11 years and the other for those aged 13–16 years. In accordance with the current system of education in Poland (Figure 1), the target groups for implementing e-Bug resources are children attending primary schools (children aged 7–13 years) and secondary schools (gymnasia, children aged 13–16 years). The implementation of the e-Bug educational resources in Poland will be integrated into the educational structure of the school programme, which is regulated by the Ministry of National Education (MNE). This programme covers general goals, tasks, contents and outcomes that should be accomplished at each educational level. At the primary education level, schools are required to use special teaching pathways, such as health education and promotion, and protection of the environment. Specific topics in these fields are drawn up individually by schools in their original programmes, but have to be approved by the MNE. Within the basic subjects there are topics and fields, which may include the basics of infectious disease, such as microbiology, antimicrobial agents, hygiene rules, health behaviour, major health threats and human influence on the environment. At the secondary education level in the gymnasium, goals approved by the MNE concern the development of healthy behaviour and safe lifestyles, improvement of awareness and recognition of risk factors for diseases, and interactions between health and behaviour. The specific pathways to achieve these goals and tasks are drawn up individually by schools, and this provides an opportunity for implementation of the e-Bug educational materials.

Major achievements of e-Bug in Poland

The e-Bug Project in Poland is coordinated by the Department of Prevention of Infection at the National Medicines Institute in Warsaw. The initial task was to undertake a review of the existing educational programmes in Poland. None of the existing materials covered antimicrobial resistance, transmission and spread of infections, or immunization as separate subjects. For children aged 9–11 years, the biology programmes and education pathways include some basic information from microbiology (properties of bacteria and viruses), hygiene rules (hand hygiene) and infection prevention methods for infectious diseases. For children aged 11–16 years, the biology and health education programmes include such problems as features of public
The evaluation team concluded that microorganisms and infectious diseases were represented in the curriculum only to a basic level and covered in a very limited time period. The infection prevention and hygiene aspects were being taught during general educational sessions, rather than in dedicated science lessons (e.g. during hours spent with tutors). Any additional information being taught depended on individual educational initiatives at different schools. There was a gap between current infectious diseases issues and educational resources provided by schools, creating an opportunity for the implementation of initiatives such as the e-Bug Project.

The second goal of the e-Bug Project in Poland was the dissemination of the educational materials to Polish schools. The overall number of schools in Poland in 2009 was \( \approx 14000 \) and \( 7200 \) at the primary and secondary levels, respectively. The team selected 40 primary and 40 secondary schools, and 4000 junior packs for primary schools and 4000 senior packs for secondary schools will be printed. Printing of materials, distribution of printed materials and teaching of educators is supported by industrial sponsors (PZ Cussons Polska S.A., an international company producing cleaning and hand hygiene agents). During the preparation period, e-Bug materials were translated into Polish and prepared for printing. The Polish version of the resources was reviewed by experts in microbiology, infectious diseases and teachers from two pilot schools (a primary school in Łódź and a gymnasium in Warsaw). The pilot implementation was preceded by sample lessons for educators. The hand hygiene topic was chosen as a subject for sample lessons. Thanks to the sponsor’s support, those lessons were recorded and CD copies will be attached to the packs as a demonstration material.

The pilot lessons in selected primary schools were successfully completed at the beginning of 2011. After the pilot lessons, some modifications to the packs were made to reflect comments from the children and teachers. Following this, resources
will be provided to children in their second year of education in primary school and in their second year of education in secondary school. These age groups have been selected because expert opinion suggested that they will have the best understanding of the resources, taking into account knowledge they have previously gained. This was confirmed by teachers from different schools invited to take part in the e-Bug Project in Poland. The implementation will be supported by an evaluation process using special questionnaires addressed to teachers and children. These will be provided before and after implementation to check on improvements in knowledge and ascertain opinions about the educational methodology.

In order to promote the e-Bug Project, two big events addressed at children and parents will be organized in supermarkets in Warsaw, entailing cooperation between educators and the sponsor. Promotional materials for e-Bug, such as leaflets, pencils and cups, will be prepared and delivered by sponsors, while the events will be performed by educators who will demonstrate hand hygiene activities and refer to the e-Bug web site and materials.

During the e-Bug preparation period, a feature on hand hygiene activities was also aired on one of the most popular morning TV programmes, in the middle of the 2009 influenza pandemic.

e-Bug and other campaigns in Poland

e-Bug is linked to other educational programmes and initiatives coordinated by the National Medicines Institute in Poland. In line with the recommendations of the European Commission, a strategy against antimicrobial resistance has been carried out in Poland since 2004. This strategy established subgroups that cover specific objectives and tasks from different fields. A special web site (www.antybiotyki.edu.pl), with links to e-Bug, promotes the main issues, such as education about antimicrobial drugs. The aim of this web site is to disseminate knowledge regarding rational antibiotic therapy among medical professionals and the general public. As part of a joint initiative between the National Medicines Institute and the Polish Educational and Pedagogical Publisher, a special interactive game was developed for children aged 9–11 years, showing some features of bacteria, interactions between antibiotics and bacteria, and hygiene procedures. Some of the e-Bug educational materials were prepared and published in the magazine Biology at School, aimed at biology teachers. These materials contained the basics of bacterial infections and information about antimicrobial resistance (mechanisms, containment).

Conclusions

Microbiology, infectious diseases and hygiene are represented in the current educational curriculum at primary and secondary schools in Poland at a very limited level. The e-Bug teaching pack is a valuable resource that is useful for improving knowledge about microorganisms, hygiene and antimicrobial agents for pupils, teachers and parents. The ideas for activities and lesson scenarios can introduce important health issues in a way that is attractive, entertaining and accessible to children. Such interactive methods may influence not only knowledge but also skills and have the potential for establishing good health habits. Moreover, with appropriate incentives, children may become educators for their families and the web site activities may enable a more continuous contact with the contents of e-Bug.

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