Zap Asthma Online Simulation

Introduction

The Zap Asthma online simulation (http://www.peachtreelearning.com) is a Web site dedicated to helping children better understand their asthma. The site is a product of the Zap Asthma Consortium (http://www.sph.emory.edu/zapasthma/default.htm), which is a project of the Technical Communication Program at Southern Polytechnic State University, Atlanta, Georgia.

The goal of the Zap Asthma online simulation is lowering asthma morbidity and mortality among asthmatic children in the Atlanta region. This project is specifically aimed at African American children, but the material is applicable to all children. The simulation uses a question-and-answer format; the Web site asks the user questions about a "virtual" (imaginary) patient. Sometimes the virtual patient will say something inaccurate about asthma, which the user can correct. The user needs a basic understanding of asthma; the site does not teach about asthma; rather, it just reinforces what the child should already know. I suspect that children enrolled in the Zap Asthma Consortium will already have this information. I would encourage users of the Zap Asthma online simulation to review the Zap Asthma home page to learn more about asthma. This simulation is very good at reinforcing key points about asthma care. While it is useful in various settings, an ideal situation for using this Web site would be in a hospital's child life department. After the doctors, nurses, and/or respiratory therapists have taught a patient who was just hospitalized with an asthma flare-up more about asthma, the child could then go to the Zap Asthma Web site to review what he or she had learned.

Technology

This simulation requires an Internet connection. It will run on a computer that uses the Microsoft Windows operating system (Windows 98 or later) or on a Macintosh computer (OSX operating system or later) and Microsoft Internet Explorer (5.2 or later). The simulation will not run properly with the Netscape or Firefox browser. The browser should have Java script enabled. The site recommends that the computer have a sound card. Monitor resolution should be 1,024 × 768 or higher. Use a fast Internet connection; a dial-up connection will slow down the program, making it less effective. I used a Windows-operating-system computer with Internet Explorer 6.0 and a fast Internet connection, and the program ran smoothly, without any technical problems.

Content and Presentation

This is an excellent program that is well designed for its target audience. It is easy to navigate and fun to do. It is designed as an interactive test that quizzes the user about his or her asthma knowledge. The teaching is appropriate, with positive feedback for correct answers. Wrong answers are corrected in a nonjudgmental way. Total time to run through the quiz is approximately 10–15 min (though the Web site says most users require 30 min), so even a child with a short attention span can use this program without getting bored. The graphics are colorful and easy to read. The program is interactive and engaging. Though a sound card is recommended, there is almost no audio in the simulation. More audio would have made the simulation more interactive.

Though this is an excellent Web site, there are a couple of technical problems that should be addressed. There are 2 questions in which the user watches a streaming video of a child using a metered-dose inhaler with spacer and peak flow meter and is instructed to choose the most accurate technique of several that are demonstrated. Unfortunately, the images are very small and are jerky, making it difficult to see the techniques being demonstrated. A larger window and better streaming would make the video easier to see. Also, when the simulation instructs the user to set the green, yellow, and red zones on a peak flow meter, the user needs to pull up the patient's asthma treatment plan to find the listed zones. The asthma treatment plan is accessed by pushing a small button near the edge of the screen, and the button is easy to miss. Having the asthma treatment plan already on the screen to review would be more helpful. Finally, having links to the Zap Asthma home page scattered throughout the program would be useful. There is a link in the "About Us" section of the home page, but most children will skip that section and never see the link.

From an asthma-guideline and education perspective, the Web site says that all patients with asthma should have a peak flow meter, but this recommendation is controversial, as many patients with mild intermittent or persistent asthma do not need to use a peak flow meter on a daily basis. Also, many people who have moderate persistent asthma do not use peak flow meters. I would refer to the peak flow meter as a "suggestion" or "consideration" that should be individualized to each patient, rather than as a "requirement."

The program also instructs children to daily check their sputum as part of the asthma treatment plan, and it comments that changes in the

color and amount of sputum produced might suggest an infection that could affect their asthma control. This is not a very useful way of predicting worsening of asthma control, and it can be misleading, implying the need for antibiotics—something that the National Asthma Education and Prevention Program guideline update states is not part of routine asthma care.

This program is rated for children ≥ 8 years old, but I think this simulation is most appropriate for teenagers and pre-teens. Children under 10 years old would most likely get more out of the simulation with an adult's supervision.

One final drawback to this simulation is that there is no answer key at the end of the quiz. While the simulation tells you if you got a question right or wrong and gives you a score at the end of the quiz, it does not tell you what you got points marked off for. I took this quiz several times, trying both to do well and do poorly to see what the simulation's feedback would be. I never got 100% correct! Some type of feedback at the end of the quiz, reviewing what the user got wrong and needed to review, would be useful.

Summary

This is a good educational program for helping a child review asthma knowledge. It does so in a comfortable environment, being educational and entertaining at the same time. It is an excellent aid for asthma education and should be considered as another tool in caring for children with asthma.

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Porta-Mist cordless powered nebulizer
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