

Ben Can't Breathe



Purpose

This simulation exercise is a story about a teenage boy who grows up on a farm. The story is based on discussions with many farm parents and children from Kentucky, Iowa, and Mississippi. It includes information about farm economics, productivity, health, and injury gathered by University of Kentucky researchers. As participants complete the simulation, they interact with each other and with the characters in the story. They make decisions that can prevent a serious work-related health problem for the character in the story. The exercise is designed to teach participants the serious consequences of a common health problem and the simple practices by which to prevent the problem.

Credits

This simulation exercise was initially developed in 1999 by Pamela Kidd, Deborah Reed, Henry Cole, Daniel Rosnik and Tim Struttmann at the Southeast Center for Agricultural Health and Injury Prevention, the Kentucky Injury Prevention and Research Center, and the University of Kentucky College of Nursing under the United States Department of Health & Human Services/United States Public Health Service/Centers for Disease Control & Prevention/ National Institute for Occupational Safety and Health (NIOSH) Grant #1 RO1 CCR414307 to the Southeast Center for Agricultural Health and Injury Prevention, Deborah Reed, Principal Investigator. The views and conclusions contained in the document are those of the authors and do not necessarily represent the official policies or recommendations of NIOSH, the University of Kentucky or any department or agency of the government of the United States or the Commonwealth of Kentucky.

Introduction

This is a story about Ben, a teenage boy, who grows up on a farm and becomes the farm operator. The story begins when Ben is 15 and ends when he is 55. As you complete this exercise, you will interact with Ben and other characters in the story. You will be asked to make decisions that can prevent a serious work-related health problem for Ben. Many farmers develop this health problem. We hope this story will help you to understand the serious nature of this health problem and to take the simple steps necessary to protect your own health.

Instructions

You should have three items to complete this simulation: A problem book, an answer sheet, and a pencil. Read the background information and problem situation described on the following pages. Next, answer each of the questions one at a time. Do not mark your answers in the problem book. When you have selected an answer to a question, look up its number on the answer sheet, and circle T if the answer is true or F if it is false. Some questions may have more than one true answer. Don't jump ahead. As you work the exercise, look at the background information about "Ben Can't Breathe" (page 3) as often as you need to. It's okay to look back to earlier questions and answers, but please don't change your answers.

When you have finished, you will learn how to score your answers. You will also receive a master answer sheet that will explain why each answer is true or false.

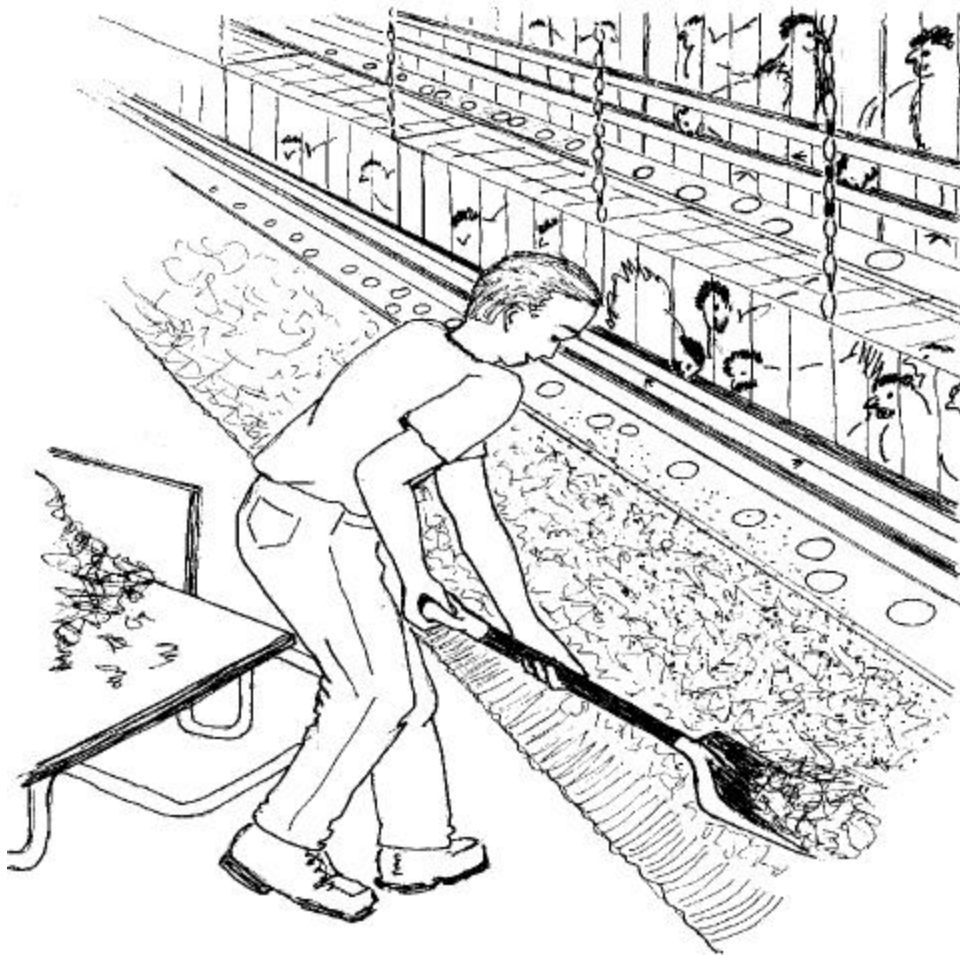
Background Information

Ben at Age 15 Years

Ben is 15 years old. He lives on a 150-acre poultry farm. His family also grows about 50 acres of hay and alfalfa. Ben loves farming. He plans on taking over the family farm someday. Ben likes sports and is a good athlete. He's a running back on his high school football team.

Cleaning Out the Poultry House

After coming home from football practice, Ben starts cleaning out the poultry house. He shovels out and hauls away the wood chips and chicken manure. Then he puts fresh chips below the pens. This is one of his regular jobs. Ben says, "It's hard work, but I like it, and it helps keep me in shape."



Please turn the page and continue.

Normally Ben shovels out the poultry house once a week. But for the last few weeks, football season has kept him so busy he has cleaned out the poultry house only about every two weeks.

As Ben shovels out the poultry house he sees a lot of mold in the manure and wood chips. Soon the air gets very dusty. Because of the hard work, Ben soon is breathing hard, but he feels fine and gets the job done in a couple of hours.

Question A

What are some things in the mixture of wood chips and chicken manure that can get into the dust in the air as Ben shovels out the poultry house?

(For each item, circle T or F on the answer sheet.)

1. Spores from mold and fungi
2. Insect droppings and parts of dead insects
3. Chicken feed
4. Dried chicken manure
5. Bacteria
6. Ammonia and other gases
7. Termites
8. Tiny pieces of chicken feathers and skin

[After you have marked your answer sheet please continue with the story.]

When Ben finishes cleaning out the wood chips he goes in for supper. After supper he takes a shower and goes to bed early. When he wakes up the next morning, he feels lousy. He's coughing, having chills and has a fever. He gets scared when he notices that he's really short of breath while walking to the bathroom and getting dressed for school. His mom decides to take him to the doctor. Ben is worried. There's a play-off game tonight and the football team is counting on him.



Doctor Jones examines Ben, orders a chest x-ray and some blood work. When the results are back, the doctor asks Ben, "What did you do yesterday?"

Ben says, "It was a pretty normal day. I went to school, then to football practice, did my chores, ate supper and went to bed."

Doctor Jones asks, "What type of chores did you do?"

Ben says, "I cleaned out the poultry house."

Doctor Jones asks Ben if he wore a mask or a respirator during the cleaning. Ben says, "Heck no, why would I need something like that?"

Please turn the page and continue.

Doctor Jones says, “Ben, I think breathing the dust and the mold in the manure and wood chips made you sick. A good dust mask or a respirator could keep the dust out of your lungs.”

Doctor Jones tells Ben, “The chicken manure and spilled grain in the wood chips is a good place for mold and fungi to grow. When you clean out the poultry house, spores from the mold and fungi get into the air along with dust from the chicken manure, uneaten feed, and bug droppings. The dust is filled with these organic particles, tiny pieces of materials that are or were once living things. When you breathe in this dust, your body can react to these organic dust particles just like it would to invading germs. You can have an allergic reaction that makes you sick just as if you had a bad respiratory infection or the flu.”

Question B

The next time Ben cleans the poultry house, what are some things he can do to protect himself from breathing organic particles? (For each item, circle T or F on the answer sheet.)

9. Wear a two-strap, NIOSH approved paper dust mask
10. Wear a half-face respirator with filter cartridges
11. Wet down the wood chips
12. Clean out the wood chips more frequently
13. Install a exhaust ventilation fan in the poultry house
14. Tie a bandana over his mouth and nose

[After you have marked your answer sheet please continue with the story.]

After going to the doctor, Ben feels bad for a week. He can't play football for a couple of weeks because every time he tries to run he starts coughing and gets out of breath. In about three weeks he is back to normal. Ben starts thinking about all the farm work he does in dusty surroundings. He talks with his parents about the times they and other farmers work with wood chips and dusty, moldy hay and grain. He wonders why the dust doesn't seem to bother his dad or his granddad.

Question C

Which of the following farm tasks puts a farmer at risk of breathing dangerous organic particles?
(For each item, circle T or F on the answer sheet.)

15. Shoveling grain for livestock
16. Using a combine during grain harvest
17. Shoveling out and disposing of the moldy top layer of silage
18. Spreading manure
19. Preparing compost for fertilizer
20. Fueling a tractor
21. Baling and handling hay bales

[After you have marked your answer sheet please continue with the story.]

Ben at Age 45 Years

It is now 30 years later. Ben is 45. He's married and has three kids. He's working the family farm and also holding a part-time job.

Ben has continued to do many dusty jobs on his farm. Even though he coughs and wheezes, he rarely wears a dust mask or a respirator. He says it is too much trouble and that the masks are hot and uncomfortable. Because his lungs are constantly irritated, he catches about six or eight bad chest colds every year and has had pneumonia 4 times in the last 6 years.

Mary, his wife, is worried about him because he's losing weight, coughing a lot, getting short of breath, and says he's tired all the time. Mary thinks he's not feeling well because he's been working too hard. She insists that he go see the doctor.

The doctor sends Ben to a specialist. After an examination and some tests, the specialist diagnoses Ben with Farmer's Lung (Hypersensitivity Pneumonitis).

Question D

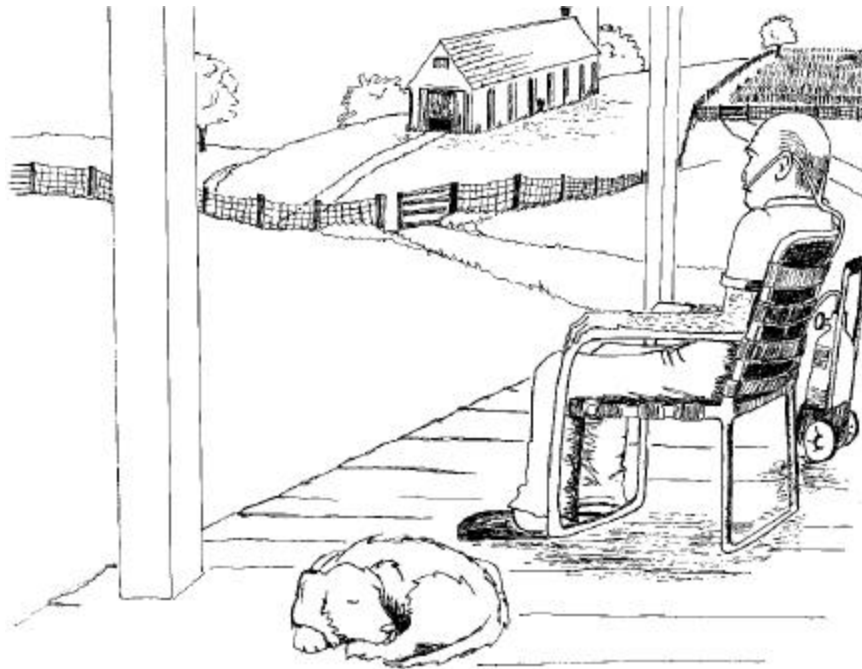
What is Farmer's Lung? (For each item, circle T or F on the answer sheet.)

22. Pneumonia
23. A form of lung cancer
24. A chronic disease that results from inflammation of the airways and air-sacs in the lung
25. A chronic form of emphysema found in smokers who work on farms

[After you have marked your answer sheet please continue with the story.]

Mary and Ben had never heard of Farmer's Lung (Hypersensitivity Pneumonitis). They were very surprised to find out Ben will never get completely well. In fact, the doctor said he's likely to get worse and likely to die at a young age.

Ten Years Later - Ben at Age 55 Years



Over the next 10 years, Ben got worse. He now needs portable oxygen occasionally. He is slowing down and depends on his three children to keep the farm going. He can't afford health insurance because his diagnosis of Farmer's Lung makes his premiums too high.

Please turn the page and continue.

One morning, three months after his 55th birthday, Ben had a particularly bad episode. He could barely catch his breath after coming down stairs for breakfast. After eating almost nothing, he said he felt tired and went back to bed for a nap. It took all the strength he had to get up the stairs and back into his bed. Mary had to bring him his oxygen bottle before he could breathe comfortably and rest.



Question E

With Ben's Farmer's Lung disease progressing, what are some of the issues he and his family must face in the near future? (For each item, circle T or F on the answer sheet.)

26. Mary may have to get a job in order to make ends meet
27. Ben should think about writing a living will and signing a paper that explains his treatment wishes
28. Ben and Mary may lose the family farm
29. Ben may have to retire from farming
30. Ben may become bedridden as his disease progresses
31. Ben will have to wear an air-purifying respirator to breathe

End of the story

Please mark your answers on the answer sheet and complete the questionnaire that is attached to the answer sheet. Ask the instructor for a copy of the answer key. Discuss any ideas and differences of opinion. Give your completed answer sheet and questionnaire to the instructor. Thanks! Your answers may be used to improve this exercise.