

Chemical safety practices.

Bhopal

Union Carbide made methyl isocyanate in the United States and was transferring banana factoring of this chemical to its plant in Bhopal India. In designing the Bhopal plant union Carbide did not transfer all the safety mechanisms available.

The government of India required the Bhopal plant to be operated entirely by Indian workers.

After the construction of the plant safety practices eroded. High turnover of employees, failure to properly train new employees, and low technical preparedness of the Indian labor pool were factors contributing to the safety practice erosion. The other source of eroding safety practices was the move away from U.S. standards toward more work Indian standards.

Union Carbide's manuals specified that the chemical storage tanks were never to be filled to more than 60 percent of capacity. The reserve tank was filled to more than 75 percent of capacity.

The tanks were supposed to be refrigerated. The refrigeration unit had been shut down five months before the accident making tank temperatures three to four times what they should have been.

During a plant maintenance shut down a series of events occurred which caused a pressure buildup in one of the container tanks which in turn caused a large volume of the lethal gas to escape from the tank into the surrounding communities atmosphere. This resulted in the deaths of thousands of innocent individuals in the surrounding community.

Study questions.

Union Carbide argued that officials at its U.S. corporate headquarters had no knowledge of the violations of union Carbide's official safety procedures and standards. Would ignorance free them from responsibility for all aspects of the disaster?

Export of hazardous technologies to less-developed countries is motivated in part by cheaper labor costs, but another factor is that workers are willing to take greater risks. Do you agree with the view that taking advantage of this willingness need not be unjust exploitation if several conditions are met: (1) workers are informed of the risks. (2) they are paid more for taking the risks. (3) the company takes some steps to lower the risks even if not to the level acceptable for U.S. workers?

Pharmaceutical research questions.

Part 1

Cureall markets the antiviral compound, Eradovir, the first choice therapeutic for the treatment of adult AIDS patients. Pediatricians use Eradovir for pediatric AIDS cases, although no clinical studies have evaluated the safety and efficacy of this agent in children with AIDS.

Pediatricians are currently forced to prescribe anti-virals to children with AIDS without knowing whether they are safe and/or affective in the pediatric population.

Cureall has agreed to pursue studies to determine the appropriate pediatric dose of Eradovir to use in a long-term therapeutic trial. The study will compare Eradovir with a placebo. The study has been limited to children 2-12 years of age. Patients families or guardians will be compensated \$100 for every month of participation.

Questions.

Is it justified to include an inactive placebo arm in this study?

Is the compensation for this study appropriate?

Should the payment go to the parent/guardian or the child?

Part 2

Mary is the foster mother of Liz, a three-year-old child who contracted HIV *in utero*. The pediatrician, Dr. Kidd, has informed Mary of the clinical trial involving Eradovir.

Dr. Kidd goes over the patient consent form with Mary.

Eradovir might cause severe kidney, pancreas and gastrointestinal problems. Dr. Kidd is quick to reassure Mary that this is an extremely rare occurrence. Dr. Kidd highlights the potential benefits for Liz.

Questions.

1. Do you think it is appropriate for Dr. Kidd to reassure her Mary about the potential serious side effects? Could this be considered coercive behavior on Dr. Kidd's part?
2. Mary is Liz's foster mother. You think her decision was "easier" to make since Liz is not her biological child? Should Dr. Kidd have taken the foster relationship into consideration when approaching Mary about Liz's participation in the study?
3. If the three-year-old Liz were your biological child would you let her participate in this trial? Why? Why not?

Commentary.

Children physiologically are not always just smaller versions of adults.

Prescribing drugs in children without adequate clinical trials could be detrimental to the patient; however, it also may be extremely beneficial, especially in life-threatening diseases such as AIDS.

There has been no previous clinical trials for anti-virals with AIDS in children. Therefore, Eradovir needs to be tested against a placebo to determine whether it is efficacious. If Eradovir proves to be effective against AIDS, then the children who received the placebo will lose essential treatment time.

Compensation for any study must be carefully evaluated to minimize the risk of subjects enrolling for financial gain regardless of the risks associated with the study.

Question 1:

Although Dr. Kidd is correct in telling Mary that the fatal side effects are rare and that none of his patients have ever suffered from them, it is inappropriate to tell her that he is unlikely ever to witness such adverse effects in his patients. Quickly refocusing Mary on the potential benefits of being a patient in the study is a way of enticing her.

Question 2:

Mary may be as loving to Liz as she is or would be with her own biological children. Dr. Kidd needs to evaluate how the parent views the child. The child needs to be protected against enrollment in the study for inappropriate reasons (i.e. financial/medical incentives).

Question 3:

As difficult as the concerns may be, the knowledge gained from such studies is worth the effort, but they must guard against unnecessary risk.

Ethical issues in research with children.

There is a high prevalence of diagnosed asthma and wheezing in eighth graders.

The most current research is investigating the association of asthma with exposure and allergies to dust mites and cockroaches. Two researchers want to find out whether asthma and wheezing are associated with exposure and sensitivity to dust mites and cockroaches in their research population. They also want to evaluate several low-cost interventions that could reduce the children's exposure to these two allergens.

Skin break tests are done to determine whether the children are allergic to specific allergens including cockroaches and dust mites. The risk of anaphylactic shock from the skin break test is one in one million in the general population.

Questions:

What are some of the ethical and risk concerns with the protocol?

How would you suggest that the investigators address these concerns?