

PVC and DEHP in Neonatal Intensive Care Units

Kaiser Permanente

Overview

Founded in 1945, Kaiser Permanente is the nation's largest nonprofit health plan, serving 8.4 million members in nine states and the District of Columbia. Kaiser Permanente operates 29 medical centers, and 423 medical office buildings. There are 129,000 employees and 11,000 physicians. As of December 31, 2001, operating revenues were \$19.7 billion.

Beginning in July, 2001, after learning of the potential hazards to neonatal patients from DEHP exposure, Kaiser Permanente staff underwent a process to identify DEHP-containing medical devices used in the Neonatal Intensive Care Units and to evaluate alternatives. Upon completion of that process, the health system chose to switch to non-DEHP products for three commonly used NICU devices: umbilical vessel catheters, PICC lines, and enteral feeding products.

Process

At Kaiser Permanente, a technical committee for neonatal care is responsible for overseeing product selection and technical issues in neonatal units. The committee is comprised of individuals working in neonatal care units throughout the Kaiser Permanente system, including nurse managers, neonatologists, and biomedical engineers. When information about the potential hazards related to DEHP exposure for neonatal patients became known within Kaiser Permanente, staff from National Environmental, Health and Safety (a Kaiser Permanente department) briefed the committee about the problems with polyvinyl chloride (PVC) plastic and DEHP, providing background materials and other relevant information.

The discussion then focused on products used in neonatal units and on environmental stewardship issues—primarily dioxin pollution—related to PVC.

The technical committee was concerned about the presence of PVC and DEHP within Kaiser Permanente's neonatal system and wanted more information about available alternatives. Based on the direction of the technical committee, Kaiser Permanente staff conducted an inventory of NICU products. The nurse manager of one Kaiser Permanente neonatal unit gathered products from the unit and asked experts to help identify products that potentially contained PVC/DEHP, products that were high risk for exposure, and products for which alternatives to PVC/DEHP were readily available that would meet quality and performance criteria.

Staff used a risk-management process to target products and began a process of clinical trials. They identified alternative products, decided which to test via clinical trials, and chose the sites at which to conduct the tests. They also devised a questionnaire to review the performance of the alternative products. The process allowed enough time for meaningful testing and trial of products, as well as time to compile the survey data. Based on the results of the trials and evaluations, staff recommended to the technical committee that Kaiser Permanente switch to non-PVC/DEHP products for three commonly used NICU devices: umbilical vessel catheters, PICC lines and enteral feeding products. The fourth product identified for replacement, neonatal endotracheal tubes, was not recommended for a switch because a suitable alternative was not identified.

As a follow-up to the process, Kaiser Permanente engaged in a discussion with its supplier, Baxter International Inc., to conduct an analysis of Baxter's products and to focus on other non-DEHP containing Baxter products that could be adapted for NICU use. That process is ongoing.



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