DEHP in Medical Articles
PVC Prevention in Hospitals

Resource Management Agency

Project VEMED

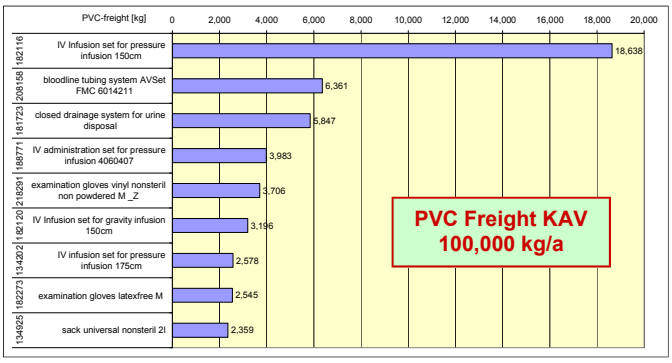
Within the VEMED project, the hospitals of the Viennese Hospital Association (KAV) are rendered support for their phasing out PVC-containing articles. Four hospitals of the Viennese Hospital Association (Rudolfstiftung Hospital, Kaiserin Elisabeth Hospital, Hietzing Hospital, Preyer´s Children's Hospital) have participated in the project.

The Project has been funded by the Initiative „Waste Prevention in Vienna", by "ÖkoKauf Vienna" and by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management.

The Problem of Plasticisers in the PVC

Without plasticisers added, polyvinyl chloride (PVC) is brittle hard plastics. Its medical application however requires a certain grade of flexibility that is achieved by adding the plasticiser diethyl hexyl phthalate (DEHP) to it. This plasticiser is not chemically bound within the PVC matrix and can thus dissolve particularly in fat-containing liquids, such as blood or nutrition concentrates.

Scientific studies show that the DEHP may harm the health of the patients, and the latter are thus, in terms of an enhanced healthcare, to be prevented from contacts with PVC.



The key PVC-containing articles of the KAV (PVC-balance 2004)

Goal

The goal of the VEMED project is to supply the healthcare institutions with the base for an efficient phasing-out the PVC-containing medical articles.

Approach

Knowledge of the key PVC-containing articles is inevitable for their efficient phasing-out. Thus a PVC balance for the KAV and four individual PVC balances for each participating hospital are made, and PVC-free alternatives are searched for.

The alternatives identified are to be tested towards their suitability for daily use prior to their adoption. Just after this step they can be established for routine employment.

PVC-containing medical articles contain plasticisers (e.g. diethyl hexyl phthalate - DEHP). These dissolve in fatty fluids, such as blood or food concentrates.

PVC Balance of the Viennese KAV

In the hospitals of the KAV (except the Vienna General Hospital), ca. 20,000 medical articles are employed in total. Out of these, ca. 800 have positively qualified for a potential PVC contents.

120 articles have been investigated towards PVC contents by applying the Beilstein test. These 120 articles are responsible for more than 98 % of the consumption of the 800 articles suspected of PVC contents.

By using also results from former projects, 320 articles have been finally identified as containing PVC.

The 320 identified medical articles cause an annual freight of ca. 100,000 kg PVC in medical waste within the KAV (except Vienna General Hospital).

Only 9 PVC-containing articles are responsible for 50 % of the total PVC-freight. 1 article, the „infusion unit pressure 150 cm", causes a PVC-freight of 20 %. **The PVC balance offers the base for the search of PVC-free alternative articles**.

Catalogue for PVC-free Medical Articles

Available alternative PVC-free articles have been intensively searched for, together with the participating hospitals. As result, a catalogue for more than 600 PVC-free medical articles has been created.

For many article groups alternatives are offered. Among the PVC-free articles, these are: infusion sets, suction catheters, syringe extension sets, rectal tubes, gloves.

In total, adequate PVC-free substitutes have been found for 16 of the key 30 and for ca. further 70 of the total of 320 PVC-containing articles.

The identification of PVC-free articles for the hospitals is enabled through a catalogue of more than 600 PVC-free medical articles.

The article catalogue offers an overview of the PVC-free articles currently available at the market and **supports** the healthcare institutions **towards an efficient phasing-out the PVC-containing medical articles**.

kav wiener krankenanstalten verbund Unternehmen Gesundheit

Participating Hospitals:
Rudolfstiftung Hospital,
Kaiserin Elisabeth Hospital,
Hietzing Hospital,
Preyer´s Children's Hospital

lebensministerium.at

Ökokauf Wien – Ein Beitrag zum Klimaschutz – www.oekokauf.wien.at

Initiative „Abfallvermeidung in Wien"

Stadt Wien – Wien ist anders.

Authors: Resource Management Agency (RMA), Vienna; Daxbeck, H., Neumayer, S., Stanić, L., Brandt, B.; Contact: +43 (1) 913 22 52.0; office@rma.at; www.rma.at; Project VEMED
RMA; english, Vers. 1.0