

HEARING SCREENING IN INDUSTRIAL WORKERS BY MEANS OF MOBILE AUDIOLOGICAL UNIT “AUDIOBUS”

W. J. Sulkowski, M. Sward-Matyja, W. Matyja

ENT & Audiology Division, Nofer Institute of Occupational Medicine, Lodz, Poland, e-mail: sulkowski@imp.lodz.pl

Introduction The mobile health units function with a success in some countries and they are intended to deliver various health care services.

Among their many objectives there are the breast cancer screening in Belgium (1) and Canada (2), cervical cancer diagnosis in rural Thai women (3), detection of diabetic retinopathy (by means of the mobile fundus photography unit) in Scotland (4) and even a mobile surgery program in remote regions of Ecuador (5).

The idea of carrying out audiometric tests using an audiology mobile unit is not a novelty and such vehicles are applied e.g. in the Irish army for the hearing examinations of soldiers put at risk due to acoustic trauma as well as by Dudley Priority NHS Trust involved in testing school children and the noise-exposed industrial workers in United Kingdom (6).

Following the above, a pioneer plan of constructing the first Polish audiological vehicle, a new approach forwards bringing an auditory test facilities and its accessibility closer to the people, has been developed.

It was finally implemented under the patronage of the Denmark Kingdom Embassy in Warsaw, the Nofer Institute of Occupational Medicine, Lodz, and the WIDEX Hearing Aids Company, Wroclaw, Poland (7) with the significant financial support of the latter.

The aim of this work is presentation of the vehicle called AUDIOBUS, which can simply be driven to wherever is needed.

Description of vehicle and its activity The unit is mounted on a Mercedes Cargo chassis.

Special acoustic sound absorbing materials were used for the wall's construction to reduce the ambient noise levels inside the audiometric booth accordingly to the international standards to perform accurate hearing tests. Audiobus has its own ventilation and heating systems, lighting and power supplies.

The audiological equipment ensures very comprehensive evaluation of hearing, both in terms of identification of hearing loss as well as its topodiagnosis.

The following tests are available: pure-tone and high frequency audiometry, speech audiometry, impedance audio-metry, otoacoustic emissions measurements and dynamic posturography.

The vehicle makes hearing testing possible almost anywhere, therefore is considered to be employed for performing audiological surveys in distant places of the country, both rural and industrial regions, especially including villages and towns with rather difficult access to specialistic medical care (8).

Its major goals are early recognition and monitoring of noise-induced hearing impairments in workers of small and medium sized industrial enterprises, as well as the epidemiological study of the age-dependent hearing loss in Polish males and females.

Audiobus is also involved in the European Commission research project „NoiseChem”(9). The project aimed at defining the combined effect of occupational exposure to noise and some chemicals on the inner ear (both the auditory and vesti-bular part) is coordinated by the University College London, Department of Audiological Medicine (Head: Prof. Deepak

Prasher) with contributions of the scientific teams from Denmark, Finland, France, Poland, Sweden, United Kingdom and USA.

One may mention that the examined people are informed by the staff (also the special booklets are distributed) on possibilities of the prevention, treatment and rehabilitation of hearing disorders by means of hearing aids, as well as on addresses of the audiological centres. It is significant educational part of the Audiobus activity in the field of health promotion.

Conclusion The hearing examination by the use of Audiobus seems to be very effective and useful. By taking the unit to individual places and plants the testing is realized thoroughly and at lower cost than if subjects had to be examined at separate appointments in other locations. The queues of persons waiting for arrival of Audiobus in all provinces of the country where a visit of the vehicle is announced confirm that our idea turned out to be successful.

Keywords: audiological vehicle „Audiobus”, noise-induced hearing loss, auditory screening

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