

## AUDI VOLUNTARY MEDICAL CHECK-UPS — GERMANY

### 1. Organisations involved

- Audi AG;
- Epidemiology Department of the Institute for Occupational Health at the Ludwig-Maximilian University of Munich.

### 2. Description of the case

#### 2.1. Introduction

Audi AG, a car manufacturer, employs 73,000 people, both ‘white collar’ and ‘blue collar’. In response to demographic changes, in 2005, Audi AG established a disease and injury prevention programme for its workforce.

The programme entails voluntary medical check-ups for all employees — every five years for staff younger than 45 years and every three years for staff older than 45 years. These check-ups are designed to detect and tackle health risks at an early stage. Younger employees are included as part of an early intervention system to reduce chronic diseases in older employees.

The programme continues to form part of Audi’s ‘HR Strategy 2020’.

#### 2.2. Aims

The Audi check-up aims to detect and tackle health risks at an early stage to improve the employability of its older workers. The data collected are used to detect individual health problems as well as help detect workplace risks which is the basis for improving working conditions and health management at Audi.

#### 2.3. What was done and how?

Prior to the introduction of the Audi check-up programme, the company conducted legally mandated occupational health check-ups, with ad hoc prevention measures implemented for individuals. The Audi check-up programme integrates these two approaches, providing a more comprehensive programme. The programme was officially initiated on 1 July 2006.

#### **Medical check-ups**

Audi offers a medical check-up to all employees every five years. The frequency increases to every three years for employees who are 45 years and older. This 75-minute check-up includes blood tests, an electrocardiogram, biometry, tissue analysis, a lung test, an eye test, a hearing test and the SF-12<sup>®</sup> Health Survey ( <sup>1</sup> ). Both, aggregate and individual data are evaluated. If necessary, individual employees who are considered to be at a higher health risk are advised to take part in targeted health

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(<sup>1</sup>) The SF-12<sup>®</sup> Health Survey is a 12-item survey that measures the following eight domains of health: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional and mental health. It is a brief, reliable measure of overall health status and has been used extensively as a screening tool.

programmes, mainly provided by Audi health insurance. These may include autogenic training <sup>(2)</sup>, programmes to quit smoking and health promotion weeks during which employees are encouraged to eat healthily and to be more physically active. Audi aimed to achieve a participation rate of at least 80 % of workers. This enabled them to include high-risk employees and obtain representative epidemiological data. All workers were informed about the availability of these medical checks, but, given their voluntary nature, 100 % coverage could not be guaranteed.

### **Analysis and follow-up actions**

Audi uses the aggregate data from the medical check-ups to assess the effects of working conditions on the health of its employees. It then evaluates the results at the regular follow-up examinations. An example of a collective study of this nature was the impact of preventive measures (e.g. height-variable mounting skids) on the health of employees. Another example, a published study based on Audi's data is examining the impact of night work on blood pressure.<sup>3</sup>

In 2008, Audi identified through the programme an accumulation of hand and arm symptoms and a number of health problems. The introduction of new joining technologies in the assembly line appeared to have unexpectedly created new health problems. Audi intervened by constructively changing the clip and snap connections to limit the weight on the joints of employees.

In addition, problems have been identified in the psychological well-being of employees. The results of the SF-12<sup>®</sup> Health Survey showed a significant level of mental health problems in two specific divisions of the company. Focused discussions between management and team leaders helped identify the source of the problem, which led to targeted development and team-building processes in these two divisions.

### **Financing**

The development of such a comprehensive programme required significant investment in the laboratory diagnostics of the medical centres at Audi. Budgets are agreed each year by management to ensure continued implementation of the programme.

## **2.4. What was achieved?**

Employees were encouraged to take part in this easily accessible check-up and Audi achieved a participation rate of 90 %. Over the duration of the programme, 60,000 medical check-ups and health promotion consultations have been carried out, over 10,000 of which were follow-up examinations.

At an individual level, the PROCAM score <sup>(4)</sup> (an indicator of the likelihood of having a heart attack or stroke) decreased significantly in all age groups between the initial check-up and the follow-up examinations. This shows the positive effects of the health promotion measures taken during this period.

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<sup>(2)</sup> Autogenic training is a relaxation technique developed by the German psychiatrist Johannes Heinrich Schultz and involves the daily practice of relaxation sessions that last around 15 minutes.

<sup>3</sup> Ohlander, J., Keskin, M-C., Stork, J. and Radon, K., 'Shift work and hypertension: Prevalence and analysis of disease pathways in a German car manufacturing company', *American Journal of Industrial Medicine*, Volume 58, Issue 5, pages 549–560, May 2015. Retrieved 16/10/2015 from: <http://www.ncbi.nlm.nih.gov/pubmed/25773725>

<sup>(4)</sup> The Prospective Cardiovascular Münster (PROCAM) study started in 1979 and has to date included nearly 50,000 workers from companies and employees of public services. The PROCAM score indicates the level of total cholesterol and the ratio of the various cholesterol fractions (low-density lipoprotein, high-density lipoprotein, triglycerides), which are crucial for calculating the risk of developing a cardiovascular disease. Based on the study, a risk calculator has been developed to assess the risk of an individual having a heart attack or a stroke.

The analysis of aggregate data allows Audi to identify workplace issues and improve its overall health management.

## 2.5. Success factors

The following success factors have been identified:

- *Easy access to the programme for employees:* The proactive approach of Audi makes it very easy for employees to use the check-up programme. This is crucial in achieving high levels of employee participation.
- *Coverage of all workers:* Although older workers are more closely followed, all workers are targeted by the programme with a view to identifying health problems as early as possible.
- *Use of measures for both individual and collective improvements:* The data collected in the check-ups are used to improve not only the individual worker's health but also working conditions and health management in the company as a whole.
- *Internal medical capacities:* Audi's internal medical centres were able to set up a systematic procedure for the early detection of health problems and the implementation of prevention measures.

## 2.6. Transferability

Companies that provide regular medical check-ups, whether legally mandated or not, could easily adopt the Audi approach. For smaller or less-structured companies, external support may be needed for the analysis of individual and aggregate data or for the implementation of health promotion activities.

## 2.7. Further information

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## 3. References and resources

- Audi AG: [www.audi.com](http://www.audi.com)
- Institut und Poliklinik für Arbeits-, Sozial- und Umweltmedizin — Klinikum der Universität München: <http://arbmed.klinikum.uni-muenchen.de>
- BGF-Institut: <http://www.bgf-institut.de/>
- Ohlander, J., Keskin, M-C., Stork, J. and Radon, K., 'Shift work and hypertension: Prevalence and analysis of disease pathways in a German car manufacturing company', *American Journal of Industrial Medicine*, Volume 58, Issue 5, pages 549–560, May 2015. Retrieved 16/10/2015 from: <http://www.ncbi.nlm.nih.gov/pubmed/25773725>
- Interview with Dr Joachim Stork, Head of Audi Health Department, February 2014.