WHO Global UV Project IAC meeting
Germany - Country Report 2016

1 Policies and legislation on UV exposures

1.1 Sunbed legislation

The ban of minors (regulated since August 2009 within the law "Gesetz zum Schutz vor nichtionisierender Strahlung bei der Anwendung am Menschen" - NiSG - (Law for protection against non-ionizing radiation in the human use) is now in its seventh year, and the law-associated "Verordnung zum Schutz vor schädlichen Wirkungen künstlicher ultravioletter Strahlung" - UV-Schutz-Verordnung - (Regulation on protection against harmful effects of artificial ultraviolet radiation - UV-Protection Ordinance) in its 4th year of operation.
The German Federal states who are responsible for monitoring the operation of sunbeds according to legislation report some problems. There is too less personnel doing the controls – the financial situation is not allowing recruitment of further controllers. Controls demonstrate that many operators are illicitly still using old appliances, do not give the required offer of qualified advice (indicated by missing documentations about skin type assessment and skin type-related dose schedules), and some of them do let use minors the sunbeds. Operators are also offering sensor-driven UV emitting appliances which emission cannot be controlled by the operators – the emission is controlled by scientifically not proven skin sensitivity measurements. With this, many operators feel the legally required consultation as unnecessary. In some cases legislation has resulted in several operators deciding to cease offering sunbed services, only some are now mostly compliant with the requirements.

1.2 Alliance for UV Protection

In 2011 BfS initiated the interdisciplinary cooperation "Alliance for UV Protection" uniting German and European agencies from science and medicine engaged in UV protection and skin cancer prevention for many years (http://www.bfs.de/EN/topics/opt/uv/protection/alliance/alliance_node.html). Since 2013, the alliance is working on the intensification of nationwide effective implementation of structural prevention measures in addition to behavioural oriented measures to prevent adverse health effects of UV (and heat) at outdoor areas. This is in direct relation to the German discussions and processes on health adaptation to the impacts of climate change. Until now, joint strategies and measures as well as a position paper could be developed. Next steps are the dialogue with governmental departments followed by expert discussions for example with policy makers, employers, responsible bodies of public facilities. As a result of the expert talks an exemplary action in a local community is thought to be conducted to trigger a comprehensive community wide approach.

2 Public information activities

2.1 German Guideline Program in Oncology (GGPO)

The Association of Scientific Medical Societies (AWMF), the German Cancer Society and German Cancer Aid jointly promote and support with the German Guideline

Program in Oncology (GGPO, http://leitlinienprogramm-onkologie.de/English-Language.16.0.html) the development, revision and use of scientifically-based and practical guidelines in oncology. In 2014, the "Evidence-based Guideline on Prevention of Skin Cancer" (Version 1.1) was released with the aim to adapt the primary and secondary prevention of skin cancer to the current state of international scientific knowledge[1]. In 2016, the first revision is thought to be started. Also, derived from the "Evidence-based Guideline on Prevention of Skin Cancer" an information for patients will be developed.

2.2 "Sun - But Save!" – BfS skin cancer prevention campaign

Since 2010, BfS realize the skin cancer prevention campaign "Sun – But safe!" (Website is currently under construction) to explain why good sun protection is vital and how that is done. For this purpose, the BfS has developed a range of modules: free teaching materials for kindergartens, primary and middle schools and parents as well as a mobile UV-exhibition providing information about the "sun", "UV radiation", "UV effects", "UV protection" (check of UV protective goggles) and the current UV-intensity. Target groups are children and youngsters as well as interested adults. Additional, BfS offers since 2011 continuously further training for kindergarten and school teacher.

2.3 German Cancer Aid (DKH): "UV protection: Clever in sun and shade"

Actual, the German Cancer Aid (DKH) perform the project "UV protection: Clever in sun and shade". The aim of this project is to carry useful knowledge and practical everyday tips for sun and skin protection in the lifeworld ("Lebenswelt") of children and youth – that means into day care centers, schools, on the sports field as well as into the counselling talk in medical practices (http://www.krebshilfe.de/wir-informieren/ueber-praevention-frueherk/junge-menschen/sonnenschutz.html).

3 Research activities

3.1 Environmental Research

Within the scope of the BMUB Environmental Research Plan (UFOPLAN), BfS could initiate and coordinate the project "International comparison of the legislations of legal regulations concerning non-ionizing radiation" (2014/2015) https://doris.bfs.de/jspui/handle/urn:nbn:de:0221-2016021914007 . The focused topics regarding optical radiation were cosmetic purpose (e.g. IPL, laser), Laser (e.g. laserpointer, for show effects), and sunbed. Problems arise due to different understanding of the words „law", „ordinance", or „regulations". Also it became visual that the addressee had difficulties to understand the questions in proper way due to difficulties with the English language and comprehension. Furthermore, the right person / institution could sometimes not be contacted maybe due to wrong addressing or forwarding within the contacted institution. Within internet search, problems occur with legislative texts in national languages. With all the limitations, the project provides an overview which seems to be useful for supplementing the EMF and sunbed database of WHO.

3.2 UV-Monitoring

[1] The German Guideline Program in Oncology (German Cancer Society, German Cancer Aid, AWMF): Evidence-based guideline on prevention of skin cancer, long version 1.1, 2014, AWMF registration number: 032/052GGPO, http://leitlinienprogramm-onkologie.de/Leitlinien.7.0.html (accessed on 17 June, 2016)

The Germany-wide solar UV monitoring network of the BfS / UBA (www.bfs.de/DE/themen/opt/uv/uv-index/uv-messnetz/uv-messnetz_node.html, since 1993), continuously measured also in 2015 and 2016 the ground-based solar UV radiation using spectral radiometers at ten representative sites. The monitoring center at BfS Neuherberg / Oberschleißheim is responsible for the quality control and storage of the monitoring data as well as for the assessment of related health effects. BfS evaluates, documents and regularly publishes the measured data as well as the UV Index (UVI) derived from the measured data (http://www.bfs.de/DE/themen/opt/uv/uv-index/aktuell/aktuell_node.html). Also, UVI forecasts for three days are published (www.bfs.de/uv-prognose). In 2015 within several heat periods in summer, UVI 8 was determined as the maximum UVI value in southern Germany.

Under particular observation are the UVI values in early summer. It is observed for some time that in winter unusually cold temperatures in the stratosphere over the North Pole, which are seen as a result of climate change, lead to the occurrence of a relative short staying Arctic ozone-hole. In 2011, this hole had similar dimensions as that one above the Antarctic. Driven by the polar winds the ozone-depleted air masses reach the countries of the northern hemisphere (so called “mini ozone events”). That leads to unexpected high UV index values on a few days in late March / early April. Since in this time of year no health relevant UV radiation levels are expected, there is increased risk for sunburns and thus an increased risk for skin cancer. In 2016, a huge Arctic ozone-hole was observed in February[2], but due to the weather conditions it disappeared after short time and no mini ozone events in Germany could be observed.

The German Meteorological Service (Deutscher Wetterdienst, DWD, www.dwd.de) publishes forecasts of the UV Index. The DWD provides calculated forecasts (https://kunden.dwd.de/uvi) of erythemal effective UV applying the ozone forecast of the Royal Dutch Meteorological Institute (KNMI) and based on the hourly results of DWD's global numerical predictions (GME, pixel distance 30 km) and the non-hydrostatic European system (LME, 7 km). The presentation of the worldwide forecasts of UV Index is developed within the framework and with support of the EC/ESA project GSE PROMOTE.

3.3 Joint research project „KAUVIR

In the scope of the environmental research plan (UFOPLAN) of BMUB a study about the interaction of UVA and UVB radiation at successive (sequential) exposure in human skin cells was promoted. The effects on DNA repair and gene expression were viewed. One result of the project indicates that an upstream UVA irradiation significantly slows the repair of UV-induced DNA damage. The obtained data were integrated into the 5 year joint research project "KAUVIR - Combination instead of addition: from UV to infrared radiation in the development of cancer and aging" of the Federal Ministry of Education and Research (BMBF). KAUVIR launched in September 2014. Executive institutions are the German Cancer Research Center Heidelberg (DKFZ). Elbe clinics Buxtehude, Leibniz Research Institute for Environmental Medicine Düsseldorf (IUF), and the Technical University of Darmstadt (grant number: 02NUK036C). The combinatorial effects of optical radiation will be investigated.

[2] Released by The Alfred Wegener Institute (AWI)