

Impact of a new legislation in Germany on intoxications by new psychoactive substances

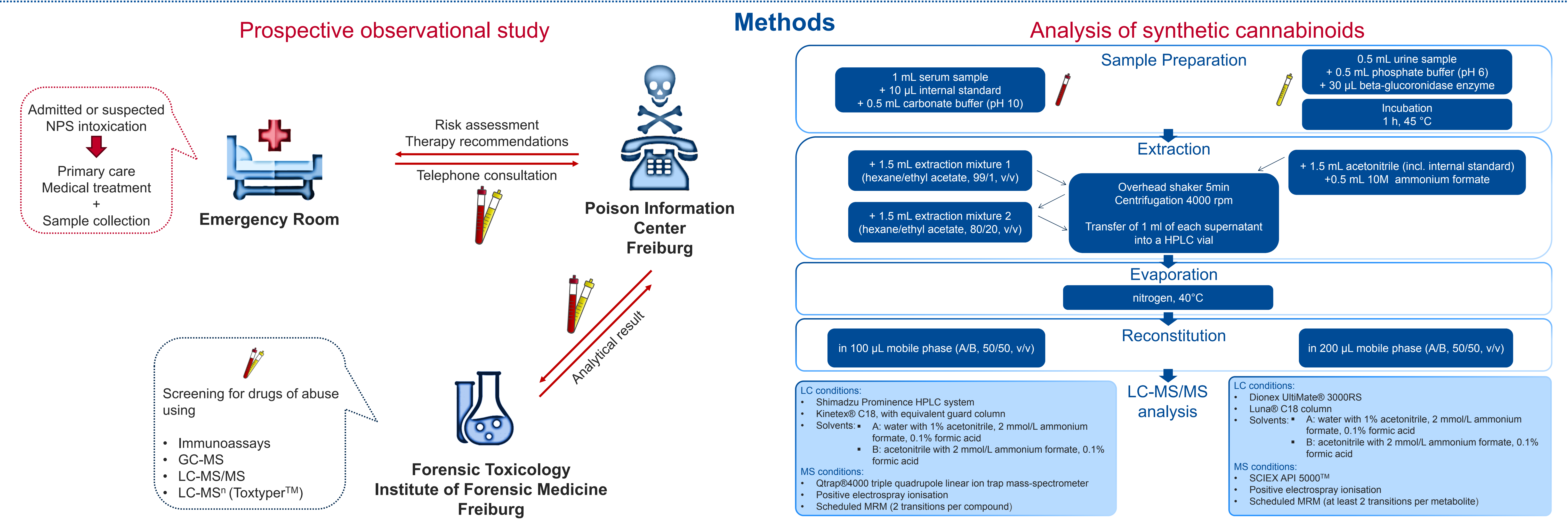
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Background & Objectives

In recent years, an increasing number of new psychoactive substances (NPS) has become available through marketing on the Internet. NPS cause serious intoxications due to the high potency of these drugs. To prevent the emergence and spread of further chemical variations of known scheduled drugs, a new German law, the ‘NPSG’ (act on NPS), took effect on November 26th, 2016. Thereby the German legislative filled a regulatory gap concerning NPS. In contrast to the Narcotics Law, the NPSG covers two classes of NPS by definition of chemical structures: substances derived from 2-phenethylamine and synthetic cannabinoids (SCs).^[1] This study presents an overview of analytically confirmed NPS intoxications, with a focus on SCs during a 2-year period. In order to show direct effects of the act, the results of 2016 and 2017 were compared with respect to the number of cases and the noxious agents.



Results & Discussion

In 2016, 28 patients with suspected NPS intoxications were included of which 17 (61%) were tested positive for SCs. 18 cases of supposed NPS intoxications were enrolled in 2017. The analysis for SCs reported positive in 10 cases (Tabl. 1).

	Suspected NPS intoxications	Intoxications with proven SCs consumption	Intoxications with detected SCs in serum
2016	28	17 (61%)	16 (57%)
2017	18	10 (55%)	7 (39%)

Tabl.1: Summary of intoxications by SCs in 2016 and 2017

Fig. 1 shows the distribution of the proportions of SCs detected in intoxication cases grouped by their legal status. Although the proportion of intoxication with NPS which are subject to the NPSG decreased significantly from 71% in 2016 to 10% in 2017, in return the proportion of the intoxication caused by scheduled narcotics increased from 35% to 70%. Also the proportion of the SCs not regulated by both laws increased. In 2016 75% of the SC intoxications were tested positive for only one SC whereas in 2017 it was just 14%.

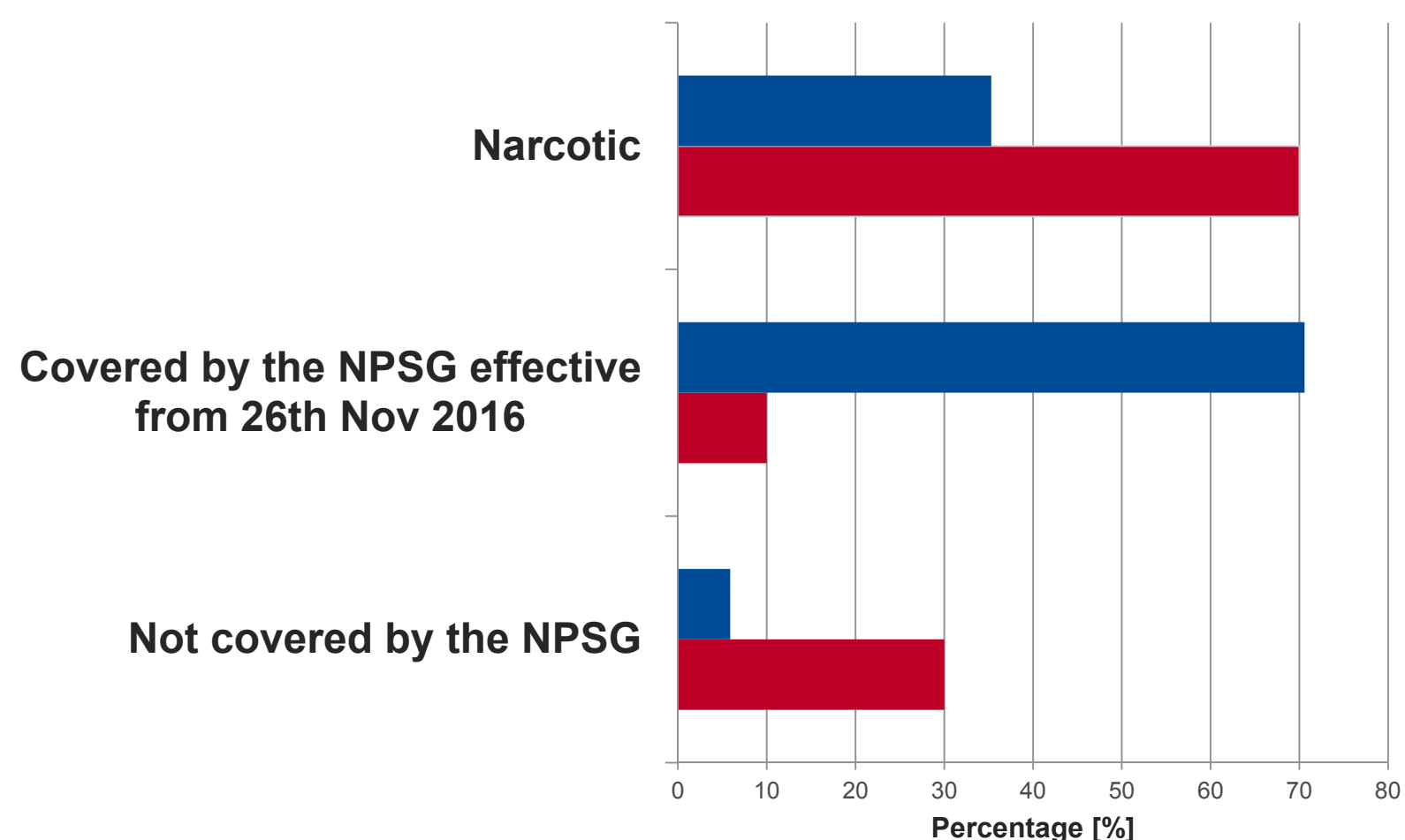


Fig. 1: Proportions of SCs detected in intoxications grouped by legal status at the time of intoxication

Law; one SC covered by the NPSG; three SCs not covered by these laws) in 2017. Since the entry into force of the NPSG, herbal blends containing new SC occurred on the market. However the proportion of intoxications with these substances remained low. For instance, the predominant

substance in herbal blends in 2017, Cumyl-PEGACLONE, was only detected in one serum sample and caused no reported monointoxication. Also MDMB-CHMICA was present in several herbal blends in both years but there was no intoxication registered. In both years the most prevalent SC detected in the blood samples was 5F-ADB, a scheduled drug. It was detected in blood samples of 6 cases in 2016 (35%) and 5 cases in 2017 (50%).

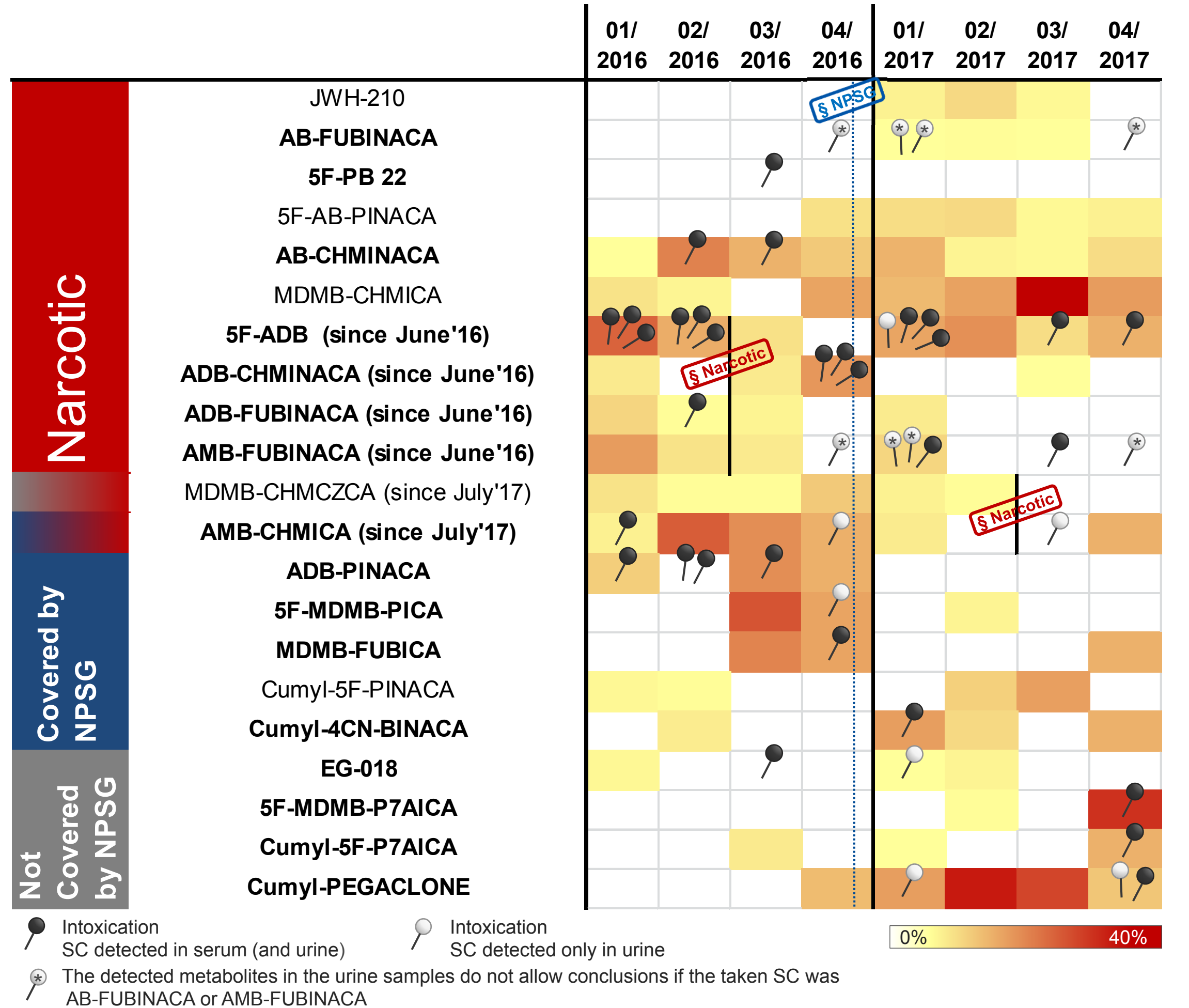


Fig. 2: Heatmap showing the distribution of substances found in herbal blends during the monitoring on a quarterly basis correlated to the occurrence of the reported SC intoxications

Conclusion

In 2017 there were significantly less documented intoxications than in 2016, but the percentage of cases caused by SCs was nearly the same. However, a number of SCs currently not covered by the NPSG occurred. It is assumed that these SCs were deliberately designed to escape the NPSG, whereas the amount of intoxications of these SCs remained low. However, regarding 5F-ADB two changes in law seem to have only little influence on the market supply and the intoxication rate. Nevertheless, the decreasing number of cases suggests an effect of the NPSG, although there are limitations. For example, the collected data do not refer to a representative sample and the number of unreported cases might have increased significantly.

Acknowledgement

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References

^[1] Gesetz zur Bekämpfung der Verbreitung neuer psychoaktiver Stoffe – Neue psychoaktive Stoffe Gesetz(NpSG)

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