



# Use of Routine Health Care Data: Aspects of Cancer Care in Cervical Cancer Patients in Lower Saxony between 2010-2015

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## Purpose

The Legal Act on the Epidemiological Cancer Registry of Lower Saxony (GEKN) in its revision of January 1, 2013, assigned the Epidemiology Cancer Registry Site (EKN) with the task of recording all cancer-related diseases and cancer deaths in Lower Saxony. In Germany, cervical cancer screening is regulated by the German Federal Ministry of Health and Social Security. In 2013, about 4,610 were diagnosed with cervical cancer and about 1,550 died because of it (1). The purpose of this research is to investigate whether cervical cancer findings and care in Lower Saxony has altered.

## Methods

In general, the structured quality reports (SQB) of the hospitals, the hospital diagnostics statistics (KHDS) and the case-related hospital statistics (DRG statistics), the KVN benchmark reports, and the KBV annual quality reports serve as a database for the representation of the use of inpatient care. The indications for medical interventions are derived from an ICD-10-based algorithm, and the operating procedures are categorized using the OPS codes (OPS, operation and procedure keys). The evaluation is focused on the KV Benchmark reports on the years 2010 and 2015.

## Results

The KVN Benchmark reports (2) sum up findings of the cervical cancer screening in Lower Saxony between 2010 and 2015. The results are based on the Munich Nomenclature II/III:

Even though the total number of Pap smears and the total number of examined women changed between 2010-15, the ratio of both demonstrated only marginal changes (1.18 -1.13). Overall, 14,954,945 pap smears from 12,886,304 women have been analyzed. The number of non-exploitable smears increased by time with an unusual peak in 2014. Overall, 15,274 of the pap smears (0.001%) were not exploitable (table 1).

Mild and moderate cervical intraepithelial lesions (Pap IIID) demonstrated an initial increase (15.3%) between 2010-11, subsequently only a smooth raise could be observed (1.7%). In contrast, severe cervical lesions (Pap IVa / IVb) decreased by 4.2% respectively 20%: Pap IVa dropped from 3,844 to 3,681 (Max: 4,335 in 2011) and Pap IVb dropped from 220 to 176 (Max: 345 in 2014). In addition, the amount of cytological detected Pap V decreased by 24.8% from 383 to 288 (Max: 410 in 2011) (table 2).

Highest percentages of unsuspected Pap smears were observed in 2010-11 (98.13% respectively 98.14%).

Between 2012-15, percentages demonstrated a moderate decrease to a stable plateau (97.80%, 97.74%, 97.86%, and 97.91%) (table 3).

Table 1: Total number of pap smears (examined/non-exploitable) and women in Lower Saxony between the year 2010 and 2015.

Year/Results	2010	2011	2012	2013	2014	2015
Examined women	2,156,069	2,485,839	2,081,604	2,077,453	2,067,404	2,017,935
Examined smears	2,541,480	2,902,176	2,350,559	2,420,663	2,390,223	2,349,844
Non-exploitable smears	2,201	2,112	1,825	1,735	4,269	3,132
Examined smears/ Examined women	1.18	1.17	1.13	1.17	1.16	1.16

Table 2: Pap smear distribution in total numbers based on the Munich Nomenclature II/III in Lower Saxony between the year 2010 and 2015.

Year/Results	2010	2011	2012	2013	2014	2015
I/II	2,115,742	2,439,586	2,035,871	2,030,437	2,023,136	1,975,703
III	8,103	8,545	8,332	8,990	6,267	4,747
IIID	27,777	32,781	33,022	33,848	34,007	33,340
IVa	3,844	4,335	3,796	3,701	3,337	3,681
IVb	220	182	206	154	345	176
V	383	410	377	323	312	288

Table 3: Comparison of suspicious and unsuspected pap smears based on Munich Nomenclature II/III in Lower Saxony between the year 2010 and 2015.

Year/Results	2010	2011	2012	2013	2014	2015
I/II	2,115,742	2,439,586	2,035,871	2,030,437	2,023,136	1,975,703
III-V	40,327	46,253	45,733	47,016	44,268	42,232
Overall	2,117,752	2,441,597	2,037,883	2,032,450	2,025,150	1,977,718
Unsuspected smears in %	98.13	98.14	97.80	97.74	97.86	97.91

## Conclusions

Between 2010 and 2015, findings of the KVN Benchmark reports demonstrated an increase in moderate (Pap IIID) and a decrease in severe cervical intraepithelial lesions (Pap IVa, IVb, V). The proportion of suspicious and unsuspected Pap smears varies between 1.86-2.26%, respectively 98.14-97.74%. Since 2012, fewer examinations are used to detect the similar number of abnormalities. A gynecological-cytological screening in the context of secondary prevention can be found to be beneficial because the disease (cervical carcinoma) is severe. Precursor lesions can be diagnosed non-invasive during the long latency. Therefore, the asymptomatic disease is well curable even during latency. However, further investigation is needed to put findings of structured quality reports (SQB) of the hospitals, the hospital diagnostics statistics (KHDS), and the case-related hospital statistics (DRG statistics) into line with the KVN Benchmark reports. Utilization and re-combination of distinct data sources for the evaluation of routine health care data seem to be only possible to a limited extent. The MN II was altered in 2014. Therefore, results for Pap IIID1 and IIID2 for the year 2015 were grouped in Pap IIID.

References:  
1 Barnes, B., & Kraywinkel, K. (2017). Bericht zum Krebsgeschehen in Deutschland 2016. 2 KVN Benchmark Reports. 2010-2015.  
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