Cause of death classification

The ‘femme fatale’ generation takes its name after its smoking and drinking habits. As we hypothesized that drinking and in particular smoking contributed to reduced life expectancy and lifespan equality, we were interested in a partition of causes of death that lays bare those causes of death that are most influenced by smoking. These are: cardiovascular diseases, various malignancies and respiratory diseases.

For the classification of malignancies as being amenable to smoking, we used a recent review article (Whiteman & Wilson 2016). Primary malignancies that are amenable to smoking are found predominantly in the respiratory, digestive and genitourinary tracts, in line with the rule that where smoke or its products pass, cancer arises. With the exception of the liver and bile ducts, cancer in the gastrointestinal tract from mouth to anus was classified as amenable to smoking, as was the respiratory tract. In addition, it has been proven that smoking causes cancer of the uterine cervix, the ovaries (mucinous carcinoma), the bladder, the kidney (pelvis and body) and the ureter. For mucinous carcinoma of the ovaries, detail could not be reconstructed across ICD versions (see below). Malignancies in the urinary tract were classified as being amenable to smoking.

Respiratory diseases were partitioned as infectious versus non-infectious. Although smokers are more prone to respiratory infections than non-smokers, in particular when suffering from COPD, deaths from infections of the respiratory tract also very much depend on the discovery of antibiotics and their application through researched protocols: the discovery of penicillin was not a one-off effect, but a development that has reached maturity only relatively recently.

The resolution of the ICD classification has grown substantially over the years. As we analyzed deaths from 1960 through 2015?, we used ICD-7 through ICD-10. The specifically identified categories “cancer amenable to smoking” and “respiratory infectious”, are based on the smallest common denominator: only if a specific disease could be separately identified across ICD versions did we include it in these groups. For instance, myeloid leukemia has been associated with smoking, but ICD-7 and -8 contain only a category ‘leukemia’, without subclassification. Hence, for reasons of consistency across classifications, myeloid leukemia is considered as not amenable to smoking throughout. Also, ICD-7 and ICD-8 have an overall rest group for malignant neoplasms, while ICD-9 and ICD-10 have also a rest group for each tract, if known. Because ICD-7 and ICD-8 do not have these detailed rest groups, rest groups were classified as not amenable to smoking for all ICDs.

All partitions of causes of death are wrong. Above we mentioned that patients who suffer from COPD, a non-infectious respiratory illness, are prone to respiratory infections. Similarly, poor eyesight due to diabetes can lead to accidental death. The interaction of causes is a basic reality of epidemiology (Rothman 1976). Yet, a cause of death classification can be useful in highlighting those aspects that one is interested in. Our classification achieves that.