CORRESPONDENCE

Lung Cancer Screening Using Low Dose CT Scanning in Germany

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Substantiated Modelling Instead of Flying Blind

Stang and co-authors present model calculations, based on the data of the US National Lung Screening Trial, of the expected effects of introducing lung cancer screening with low-dose computed tomography (CT) nationwide in Germany (1). With an estimated 3.9 million CT scans to be performed over three years, more than 900 000 tests would show suspicion of tumor, approximately 3% of which would be positive, such that their premature discovery would prevent about 4000 deaths from lung cancer. Thus, each confirmed case would be associated with about 30 false alarms, and about 1000 CT scans would be needed to prevent one lung cancer death. The expected cost-effectiveness would be very low.

In comparison, a recently published modelling study of the expected effects of the first 10 years of screening colonoscopy in Germany showed that about 4.4 million screening colonoscopies prevented more than 180 000 cases of colorectal cancer and detected a further 40 000 cases of colorectal cancer in early, and usually well curable, stages (2). This highly cost-effective—if not cost-saving (3)—screening thus prevented about 80 000 cancer deaths.

While the projected numbers of these studies may be subject to uncertainties (which is inevitable with modelling studies), they are most valuable to assess the magnitude of the expected effects in relation to the necessary resources. Such an assessment is required for health policy decisions be made on an epidemiologically substantiated basis.

It would be highly desirable that, also in Germany, substantiated modelling and simulation studies would be requested, funded, professionally carried out, and used for health policy decisions and prioritizations. This has long been the scientific and public health standard in other countries, thereby helping to avoid flying blind in cancer prevention (4).

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Conflict of interest statement

The authors declare that no conflict of interest exists.

In Reply:

We fully agree with the statement by Brenner and colleagues that more “substantiated extrapolations and simulation studies...for health policy decisions and prioritizations” are required in Germany to avoid “blind flying in cancer prevention”. The aim of our article was to draw attention to, with the help of such an extrapolation, the public debate on the benefit assessment of low-dose computed tomography screening in Germany and to the numerous relevant factors involved (including number needed to screen [NNS], number needed to harm [NNH], overdiagnosis, cost effectiveness, and quality of life).

It is extremely important to consider not only extrapolations and simulations prior to introducing a screening procedure but also a systematic and efficient evaluation after it has been introduced. For instance, screenings for breast cancer and skin cancer were introduced in Germany before conditions were in place to allow them to be evaluated in a timely, systematic, and efficient manner (1, 2).

A recently published, detailed analysis of cause-of-death statistics in the German federal state of Schleswig-Holstein revealed that the evidence for a decrease in melanoma mortality in Schleswig-Holstein is substantially weaker than previously assumed (3). The expected reduction in mortality from malignant melanoma of the skin has still not been shown (2, 3).

Evidence-based and cost-benefit assessments before and after the introduction of screening procedures must have a sustainable place not only in clinical, but also in preventive medicine.

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