random experiences. There is a continuing need for clinicians to reflect on their clinical experience in a systematic way that provides useful insights that lead to better doctor–patient understanding.

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Improving cancer outcomes

With regard to earlier detection of cancer in primary care, I was surprised to see no discussion about the value of recording detailed smoking histories as a way of adding diagnostic information to patients' presenting symptoms. Although this was probably outside the remit of the editorial,[1] I have found detailed smoking history recording (total dose and duration of exposure) valuable in my everyday consultations.

Smoking is a major cause of preventable ill-health, especially cancer, and I believe it is vital to record smoking history on primary care computer systems in a way that is both easily visible and searchable. At present, such smoking recording seems to be based on traditional methods that were used in the pre-computer medical records era, and here I specifically refer to the iSoft Premiere software system. In this computer programme the health practitioner can record the type of smoker, an amount for cigarette smoking, and the date smoking stops. This type of data collection is inadequate for modern general practice as it fails to inform the GP of the smoking dose or exposure that an individual patient has received, and it is not computer searchable.

At our surgery, smoking exposure is recorded as 'smoking pack years' (smoking 20 cigarettes a day for 1 year is one 'pack year') on all ever-smokers with a freetext comment attached to the Read Code, for example, 15 cigarettes a year for 27 years. This has been our recording method for over 5 years and as a GP I find this smoking information useful in thinking about patients' presenting symptoms and in intuitively assessing their cancer risk.

Thus in order to aid smoking-induced disease prediction, I propose that all UK general practice software systems should include 'smoking pack years' and 'duration of smoking' that should be highly visible and searchable.

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Rubin *et al*[1] make an interesting contribution to the complex issue of the role of primary care in improving cancer outcomes. However, they refer to survival rates from diagnosis as the benchmark of improvements in care. Unfortunately, survival rates from diagnosis are a relatively poor indicator of the efficacy of treatment as they obscure two major biases: (1) the lead-time bias; and (2) the over-diagnosis bias. Lead-time bias results in an apparent improvement in survival rates by diagnosing disease earlier but without affecting mortality. The over-diagnosis bias is the discovery of non-progressive disease, for example, many cases of prostate and breast cancer. Identification of non-progressive disease is highly likely to improve apparent outcomes as it means the disease that never would have caused death is included in outcome data and, therefore, results in a falsely favourable impression of the effect of intervention.

Mortality rates are a far better indicator of treatment effectiveness for cancer.[2] It is generally not understood that there is a lack of correlation between 5-year survival rates and mortality rates due to the operation of the biases mentioned above.[3] If we are going to compare outcomes of cancer treatment it is essential that we use measures that are replicable between healthcare systems: mortality rates achieve this, survival rates do not.

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Validity of diagnoses in the General Practice Research Database

The article by Khan and colleagues[1] highlights the strength of the General Practice Research Database (GPRD) as a research-quality database providing accurate diagnostic data to researchers on a wide range of conditions, and for millions of patients. While the search strategy for this study was broad and inclusive of prescription data, procedures, and smoking in addition to diagnoses, the authors did not identify as many articles as expected.

We published a similar systematic review of the validity of diagnoses in the GPRD[2] and found over 200 relevant publications, compared to the 49 articles identified in this study. There are two explanations for this difference. First, many validations were not mentioned in the title, abstract, or keywords of the articles and we therefore broadened our search to all studies using GPRD data. Second, our review included studies that validated diagnoses using algorithms, manual review of electronic records, and sensitivity analysis in addition to those methods included by Khan *et al*. Despite these differences in scope, our results were broadly similar and showed high validity of GPRD diagnoses, with a median positive predictive value across diagnoses of 89% (range 24–100%).

While our study was larger, Khan and colleagues assessed one important aspect of validity that we did not: the accuracy in timing of diagnoses. For some research