# Improving early diagnosis of cancer in UK general practice

## THE CURRENT STATE OF CANCER DIAGNOSIS

The UK has a poor record on cancer survival: international studies such as Eurocare and the International Cancer Benchmarking Partnership (ICBP) have consistently demonstrated that cancer survival rates in the UK are significantly worse than in other developed countries. For example, in data from 2005–2007, only 8.8% of patients diagnosed with lung cancer in the UK survived for 5 years, compared with 18.4% in Canada.[1] These differences are thought to reflect an increased incidence of cancer diagnosed in the UK at a late clinical stage, so-called 'delayed diagnosis'.

The causes of delayed diagnosis of cancer in general practice (primary care delay) in the UK remain uncertain. It has been consistently suggested that the 'gatekeeping' role of GPs in the UK contributes to the problem. When asked to consider (fictitious) cases of possible cancer, UK GPs were less likely to consider immediate investigation or referral than doctors from countries with higher survival rates.[2] However, no good correlation was found between gatekeeping and cancer survival in an international comparison of healthcare systems.[3] Relatively poor access to CT/MRI and to specialist advice may also contribute to the problem in the UK.

Recent data show that cancer survival rates in the UK are improving. However, this is also true in other countries, such that the gap between the UK and best-performing countries remains, with one or two notable exceptions, such as with breast cancer.

So although research into primary care delay continues, we would like to offer some practical advice on cancer diagnosis for GPs in their everyday practice.

## CONSIDER USING CANCER RISK PREDICTION TOOLS

There are a number of tools available to help predict current or future risk of cancer. Evidence of the effect of some of these tools has been demonstrated.[4] However, embedding their use into routine clinical practice is more challenging and will require a deeper understanding of how such a complex intervention can become normalised.

### Cancer Risk Assessment Tool (RAT)

The RAT was circulated by the National Cancer Action Team in 2012 based on the CAPER studies in Exeter. A separate table for each of 15 cancers gives the positive predictive value (PPV, %) for that cancer from symptoms present either singly or in pairwise combination. The values are colour-coded for risk. Several studies have demonstrated the utility of the RATs.[5]

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### QCancer

This is an online tool (www.qcancer.org) that calculates the current risk of cancer (PPV) at 12 organ sites based on both risk factors and clinical features. A separate tool exists for males and females. Risk is automatically calculated for all cancers in the algorithm, which may help in the diagnosis of cancer type.

### Macmillan Cancer Decision Support (CDS) tools

These tools utilise both the RAT and QCancer but extend their use into additional functions in GP IT systems. For example, a 'prompt' feature calculates the risk of six major cancers (lung, colorectal, ovarian, pancreatic, renal, oesophagogastric) for any patient whose record is being used, and alerts the user if any risk >2% is identified. A risk stratification tool can be applied to the whole practice population, or sub-groups thereof, to identify high-risk patients who may not have identified clinically.

What remains unknown about risk prediction tools is patient and professional acceptability, how they can be incorporated into routine clinical practice, and their clinical and economic impact.[4] However, we recommend that GPs should consider these tools for their own clinical practice.

## BE AWARE OF RECURRENT THEMES IN DELAYED DIAGNOSIS OF CANCER

A number of recurrent themes arise from research and audit of primary care delay in cancer diagnosis. Described below are those that we believe to be most relevant, including, where appropriate, advice to GPs on how to avoid them.

### Persistent or recurrent infection

The classical example is an 'acute exacerbation of chronic obstructive pulmonary disease' being treated with repeated courses of antibiotics and steroids while actually representing a lung cancer.[6] In theory well recognised, this scenario continues to appear in significant event audits of lung cancer. Recurrent urine infection due to underlying bladder cancer is another example.[7] In such situations, we suggest that GPs should always establish 1) when antibiotics were last used; and 2) whether the patient recovered in the meantime. If the patient is re-presenting with the same episode of 'infection', further investigation should be considered.

### Constant pain

Most pain, especially of musculoskeletal origin, varies with time, position, and movement. Constant pain should alert the GP to a possible malignancy and should be investigated. For example, constant posterior shoulder pain in a smoker may represent a lung cancer. Pain, most commonly in the shoulder, lower back, or groin, may also be a presenting feature of metastatic disease.[8]

### Unusual age at diagnosis

*Young age.* *'My doctor told me I was too*

> *"A number of recurrent themes arise from research and audit of primary care delay in cancer diagnosis."*

*"... significantly improving early diagnosis of cancer in UK general practice may require a change in culture"*

*young for cancer'* is a recurrent comment in media accounts of delayed diagnosis. Moreover, the incidence of (non-hereditary) colorectal cancer in under-50s is increasing rapidly.[9] We advise GPs to avoid excluding cancer solely on the basis of young age.

*Older age.* New diagnoses that usually have a young onset, in older patients, should be treated with caution. Examples include migraine, irritable bowel syndrome, and mechanical back pain. GPs should avoid any such diagnoses made on clinical features only; investigations are warranted.

### Infrequent attenders

Patients who have previously only rarely attended the surgery have an increased risk of cancer on presentation compared with more frequent attenders.[10] GPs should have a lower threshold for investigation in such patients.

### False-negative investigations

The classical example is chest X-ray that has a sensitivity of only approximately 75% in lung cancer.[11] If significant clinical suspicion exists, GPs should continue to pursue a cancer diagnosis, even if initial investigations are normal.

### Safety netting

Good safety netting has repeatedly been demonstrated to be of vital importance in preventing primary care delay.[12] GPs should remember that this applies to other members of the primary care team and also to systems of working. For example, if a patient presenting with new prostatic symptoms misses a nurse appointment for a PSA, what, if any, system does the practice have to follow this up?

## LOOKING FORWARD

In addition to the above advice, significantly improving early diagnosis of cancer in UK general practice may require a change in culture. Traditionally, GPs have tended to use a combination of guidelines and clinical judgement to try to identify cases of symptomatic cancer to be referred on to secondary care for appropriate management. A high 'conversion rate' (the proportion of referrals subsequently diagnosed as cancer) has been considered to reflect good skills in cancer detection but conversely may be articulating delay in diagnosis. Recent data comparing cancer outcomes between localities demonstrates the latter. Good cancer outcomes correlate with high referral rates but not high conversion rates.[13]

With the National Institute for Health and Care Excellence's 2015 *Suspected Cancer* guidelines recommending urgent referral at a PPV of 3% (less in some circumstances),[14] and with the availability of population risk tools, the role of GPs in cancer diagnosis should be clarified. Is identification of symptomatic cases via clinical judgement sufficient, or should a wider approach, for example, using population risk tools, be used to detect additional cases?

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