Editorials

Improving cancer outcomes:

better access to diagnostics in primary care could be critical

The recent publication of the coalition government's refreshed Strategy for Cancer[1] has restated the importance of earlier diagnosis as the key to improved outcomes. As it does so, it is joined by a number of other countries in Europe and farther afield, not least the US.[2] General practice is identified as being a key player in this strategy, but it begs the question: what contributions can general practice make to improving cancer outcomes?

The Cancer Reform Strategy in 2007 brought a new focus on earlier diagnosis of cancer. It resulted in the National Awareness and Early Diagnosis Initiative, a programme of work intended to achieve earlier presentation of people with symptoms, to optimise clinical practice and healthcare systems, and to improve GP access to diagnostics. This includes a National Audit of Cancer Diagnosis in Primary Care, led by the Royal College of General Practitioners with the support of the National Cancer Action Team and the Department of Health's Cancer Policy Team. In the past 2 years they have produced audit and significant event analysis toolkits and have overseen their widespread use by practices, primary care trusts, and cancer networks.[3]

Every practice in England is currently being offered its cancer profile: a set of 25 measures of performance in cancer screening and diagnosis. Elsewhere in Europe, early diagnosis initiatives include the introduction in Denmark of a fast-track system for alarm symptoms, but systematic initiatives addressing public awareness or primary care performance are still rare.

DOES EARLY DIAGNOSIS MATTER?

The view that earlier diagnosis of cancer leads to improved outcomes, including survival, is intuitively credible — the same logic lies behind cancer screening — but it is remarkably difficult to confirm. This is due to differences in definitions and measurement of delay and outcome, together with a lack of high-quality statistical models to account for clinical triage and differences in aggressiveness. From the existing literature, diagnostic delay in cancer does seem to matter, the evidence for this is growing, but quantifying its impact on survival or mortality remains a challenge.

A particular concern is the difference in survival rates for the UK, but also Denmark, compared with other developed countries. A recent analysis of the Eurocare reports of cancer survival rates concluded that, compared with mean survival in the rest of Europe, 6–7% of cancer-related mortality in Britain is avoidable and premature.[4] A comparative analysis of the Eurocare 4 data identified cancer sites, including oesophagus, pancreas, bladder, and non-Hodgkin's lymphoma, where survival to 1 year is a significant factor in 5-year survival, and thus where earlier diagnosis would make the greater difference.[5]

In addition, an analysis of indirect evidence related to late diagnosis, surgical rates, radiotherapy, and chemotherapy use for breast, colorectal, and lung cancer concluded that late diagnosis was almost certainly the major contributor to the observed poor survival in England compared to other European countries. Extrapolated to other cancers and taken with the Eurocare analyses, it underpins the assertion that between 5000 and 10 000 deaths within 5 years of diagnosis could be avoided every year in England if efforts to promote earlier diagnosis and appropriate primary surgical treatment were successful.[6]

MODELS OF DIAGNOSTIC DELAY

Delays during the period between the first development of cancer symptoms and the eventual diagnosis have been broadly attributed to the patient, the GP, and the healthcare system. In a Danish study, GP delay contributed relatively little to overall delay, although this interval was prolonged for about 10% of patients. The National Audit of Cancer Diagnosis in Primary Care, in which more than 1200 English practices contributed data on more than 19 500 patients (unpublished data), found the median intervals from first presentation to referral and referral to specialist consultation were 4 and 12 days, respectively.

Qualitative studies, however, lead us towards a more complex model of delay. When people first recognise a symptom, they undergo a process of symptom appraisal involving an attempt to understand its cause. This happens within a dynamic interplay of social factors and will be strongly influenced by psychological and organisational factors including personal models of cancer and its expected consequences. People may attempt to cope with these symptoms in a variety of ways before deciding to seek help from a healthcare professional. Further, their initial consultation with a healthcare professional may not necessarily lead onto a diagnostic pathway but instead provide a non-cancerous explanation, returning the person to ongoing symptom appraisal, self-management, and subsequent help-seeking.[7]

WHAT CAN BE DONE IN GENERAL PRACTICE?

How much of delay to diagnosis of cancer is amenable to interventions in general practice? Over 80% of patients with cancer visit their GP before diagnosis. In England we have had an urgent referral pathway for suspected cancer since 2001, with supporting guidance from the National Institute for Health and Clinical Excellence (NICE).[8] This guidance defines, for the 12 main cancer groups, specific symptoms and signs meriting urgent referral for specialist assessment. It is supported by a requirement that patients referred through this pathway are seen by a specialist within 14 days. The evidence for its effectiveness is limited and conflicting, but points to a failure to improve case selection.[9]

A recurring criticism has been the lack of a sound epidemiological base for the NICE guidance. The importance of defining the significance of symptoms of possible cancer by studies of the primary care population has only been appreciated in recent years. Two papers in this month's *BJGP* add to our knowledge in this area. In a prospective cohort study, McCowan and colleagues derived and then validated a prediction rule for symptomatic breast cancer. Although their findings need further validation, they found that a discrete lump, a lump ≥2cm in size, thickening of the breast, tethering, and lymphadenopathy were all independent predictors and that the probability of breast cancer was higher with increasing numbers of these factors.[10]

The second study, a systematic review of the risk of colorectal cancer in people with symptoms, addresses the need for quantified estimates of risk that have been derived from primary care populations. While confirming which symptoms are

significant, it also provides explicit thresholds for investigation which can be incorporated into future guidelines.[11] The case for revision of the NICE guidance is increasingly compelling in the light of a growing body of knowledge.[12] It should, for example, inform shared decision-making across the spectrum of risk by quantifying the risk associated with symptoms where data are available to do this. In the meantime, the National Cancer Action Team is already piloting the use by GPs of a risk assessment tool for patients with suspected lung and colorectal cancer, derived directly from such studies.

ARE GUIDELINES THE ANSWER?

GPs are expert at working in low-prevalence contexts, where symptoms are most commonly of benign origin. Many cancer patients present with symptoms or signs that have a low positive predictive value, and GPs need to do additional investigations to either marginalise or support the suspicion of cancer. A third study in this month's *BJGP*, of 2326 teenagers and young adults, used a retrospective case note review to determine the frequency of symptoms of potential oncological significance.[13] The authors found that it is common for patients in this age group to consult a GP but that so-called 'alert' symptoms, such as unexplained pain or fatigue and lumps, occur in only 5% of consultations. None of these proved to herald a malignancy.

In the UK, plans and funding for improved GP access to X-ray, ultrasound, gastrointestinal endoscopy, and brain magnetic resonance imaging have received wide publicity, although the 4-year time scale for their introduction is a less-trumpeted detail. GP consortia have been given the task of commissioning these services, which have been widely described as direct access, although they will be able to consider alternative approaches to achieving improved access. Meanwhile, local examples of service improvement are starting to emerge as a result of actions by the National Awareness and Early Diagnosis Initiative, such as the redesign of the pathway for chest X-ray requests in County Durham following an analysis of significant event audits of lung cancer diagnosis.

In Denmark, regional diagnostic centres are being developed to which GPs can refer patients in whom cancer is suspected but alarm symptoms are absent. In Australia, GPs in metropolitan areas have very good direct access to investigations, including computed tomography, which may reduce diagnostic delay and possibly contribute to overall good cancer survival rates. However, significantly poorer outcomes are evident in rural areas, and may reflect less direct access to investigations and specialist assessment, as well as longer symptom appraisal and help-seeking.

GENERAL PRACTICE: THE PROBLEM OR THE SOLUTION?

In both Denmark and the UK, where general practice plays a central role in health care, there are relatively poor survival rates for cancer. The gatekeeper role of the GP has been raised as a possible explanation,[14] although the Netherlands and Australia, both countries where gatekeeping is also an important function, have much better survival rates. Perhaps it is neither the GP nor the gatekeeper role that is the problem, but rather the way in which different healthcare systems support primary care in cancer diagnosis.[14] An international benchmarking study investigating this issue, currently being commissioned by the Department of Health, may also shed light on this important issue.

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