

# Integrated research efforts are needed to better understand how to reduce the proportion of patients with cancer who are diagnosed as emergencies

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Sir,

Elliss-Brookes *et al* (2012) provide further evidence that the challenges of achieving a prompt diagnosis of cancer vary substantially for patients with different cancers. Overall patterns of variation by cancer in the proportion of patients who are diagnosed as emergencies reported by the 'Routes-to-Diagnosis' project closely mirror data on the proportion of patients who were referred to secondary care as emergencies from the National Audit of Cancer Diagnosis in Primary Care (NACDPC), an audit of nearly 19 000 patients diagnosed in 2009/10 that used general practice records as the primary data source (Rubin *et al*, 2011). For example, patients with breast cancer, melanoma and endometrial cancer had the lowest proportion of emergency route/referral in either publication; the opposite was true for patients with brain, lung and pancreatic cancer and multiple myeloma (Table 1). Comparing data from both publications on the proportion of patients with an emergency diagnosis (route/referral) for different cancers indicate a Spearman rank correlation coefficient of 0.97 (i.e., a very high degree of rank agreement). Similar observations can be made about patterns of variation in the proportion of unplanned first-time hospital admission for patients with different cancers (Bottle *et al*, 2012). These comparisons, however, also reveal substantial differences in the absolute proportions of cancer patients diagnosed as emergencies using either secondary or primary care data sources. These may reflect both differences in the studied populations, and in outcome definitions and methods used

for data collection. Although the population of patients studied by the NACDCPC project adequately reflects cancer incidence statistics (Rubin *et al*, 2011), general practice records can be considered to be less likely to identify patients with cancer who first present as emergencies and either died during the spell of the respective hospital admission or who are transferred to a new address on discharge (e.g., as in the case of patients discharged to hospices from acute care). Similar patterns have been observed for patients with cardiovascular disease where estimates of incidence and case fatality made from hospital records are higher than GP records (Payne *et al*, 2012). More importantly, some patients with an emergency route to diagnosis would have no prior consultation with a general practitioner (or would see a general practitioner only once, at a phase of their illness that warrants an emergency hospital referral).

Better understanding how emergency diagnosis of cancer relates to previous encounters with primary care, and how patterns of prior consultation experience vary between different cancers, is critical to help inform the development of appropriate improvement interventions and policy initiatives. Awareness interventions might help to reduce patient delay in seeking a medical assessment, but interventions to improve the sensitivity of the appraisal of cancer symptoms by general practitioners will also be required in order to achieve a reduction in the proportion of emergency diagnoses (Lyratzopoulos *et al*, 2012). More detailed understanding of the inter-relationships between patient behaviour, general

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**Table 1.** Percentage of cancer patients who present as emergencies, by source publication (Routes; NACPC)

Cancer <sup>a</sup>	% Of cancer patients with emergency route to diagnosis or emergency referral	
	Routes project (1)	NADCPC (2)
Central nervous system/brain	62	39
Pancreatic	50	29
Lung	39	20
Multiple myeloma	37	28
Stomach	33	21
Ovarian	32	23
Non-Hodgkin's lymphoma/lymphoma	27	18
Colorectal	26	15
Renal and unspecified urinary organs/renal	25	13
Oesophageal	22	10
Bladder	19	8
Prostate	10	7
Uterine/endometrial	8	6
Breast	5	4
Melanoma	3	5

<sup>a</sup>Where the term used for a specific neoplasm is different between the two publications, the term used in the Routes project appears first, followed by the corresponding term used in the NADCPC publication. These differences indicate some differences in definitions or respective sites between the two data sets, for example, lymphoma (NACDPD) as opposed to specific restriction to non-Hodgkin's lymphoma (Routes).

practitioner assessment, including use of diagnostics, and routes to diagnosis is needed. These questions should be addressed by future research efforts encompassing nationwide analysis of both primary care records and routine hospital statistics.

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