STRATIFYING PROSTATE CANCER PATIENTS INTO PHASES OF CARE IN THE UK

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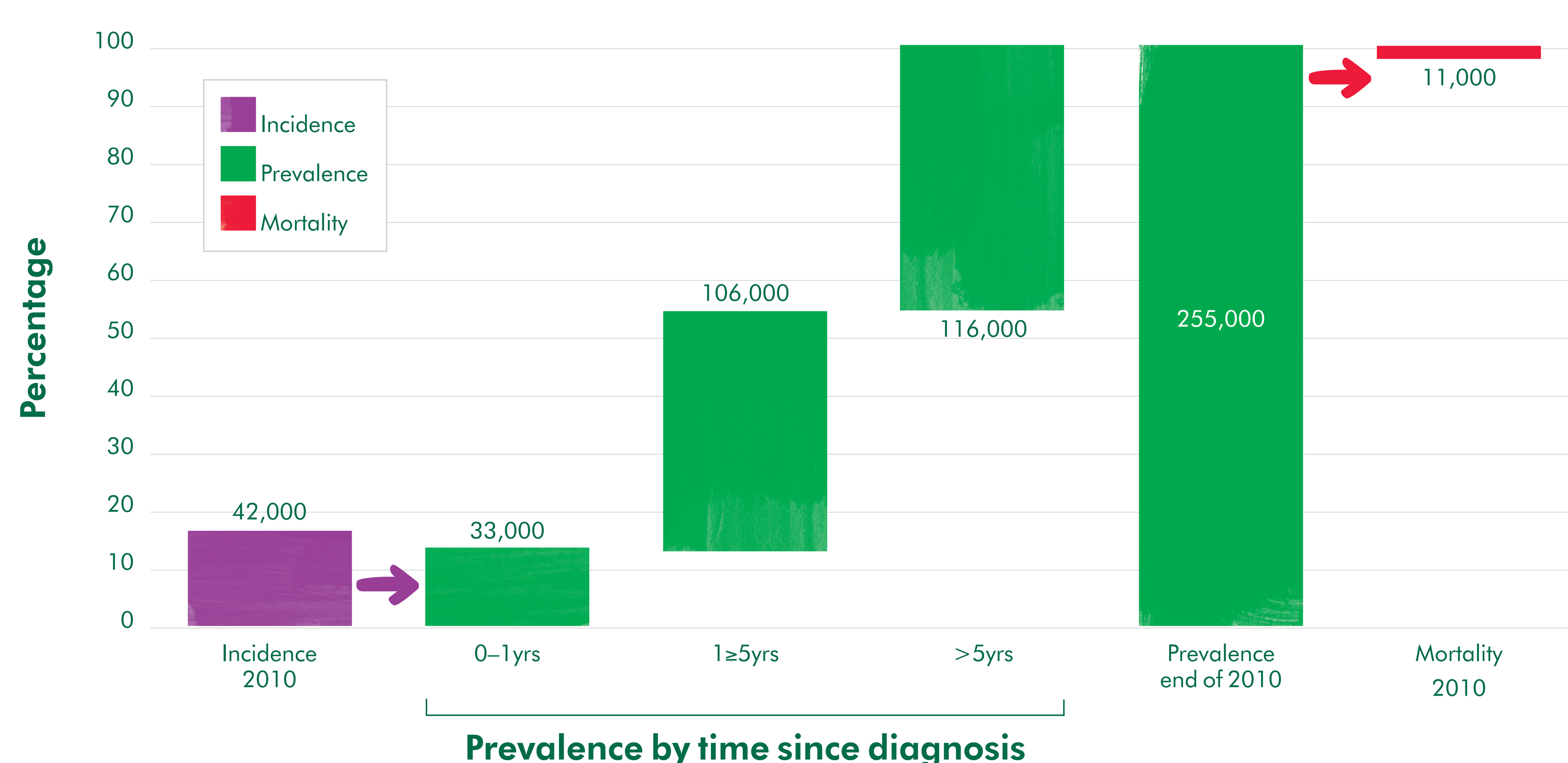
Using routinely collected data to stratify prostate cancer patients into phases of care in the UK: implications for resource allocation and cancer survivorship

Background

Prostate cancer is the most commonly diagnosed malignancy in British men and accounts for the second highest number of cancer related deaths.[i] Incidence and mortality have been routinely collected for many years and prevalence data are now being reported more frequently (Figure1). Better understanding of the demand on the health care system, beyond incidence and prevalence, can be achieved through quantifying the cancer survivors with respect to their phase of care.

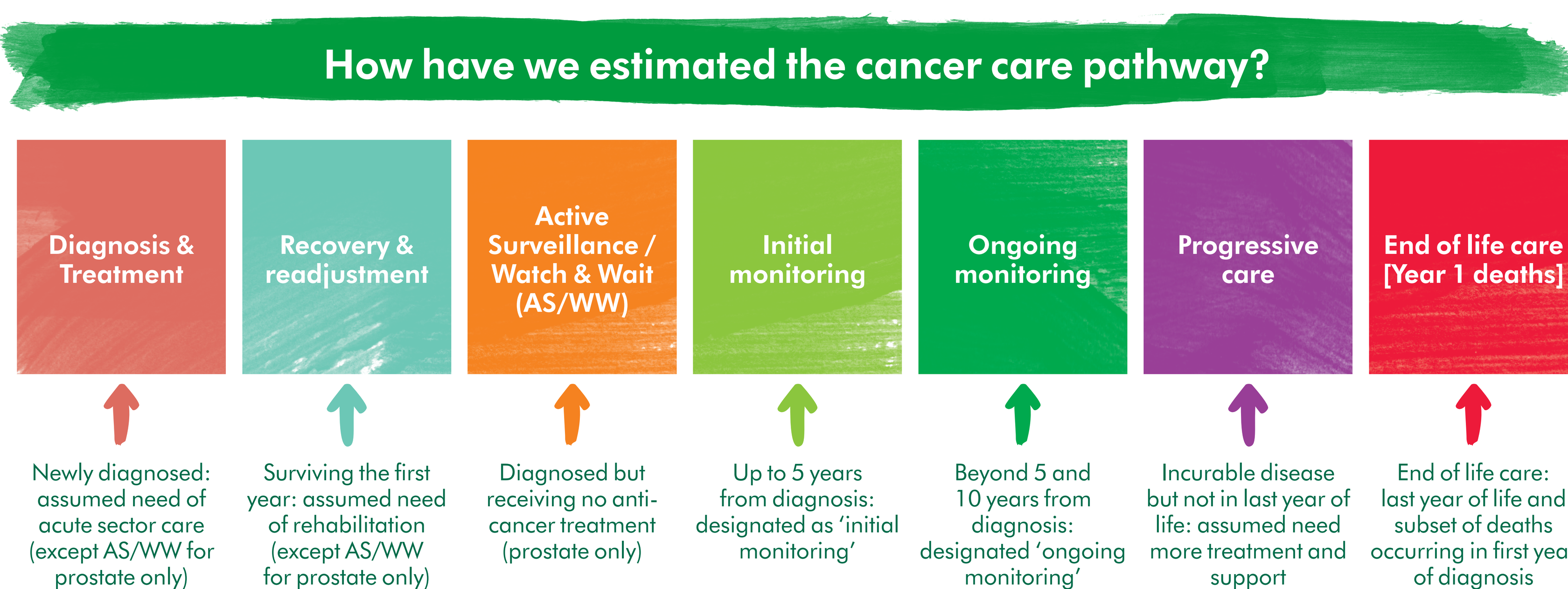
Figure 1: People newly diagnosed, people living with prostate cancer by year since diagnosis and deaths for people with a prostate cancer diagnosis, UK, 2010



Method

Six main phases of care for prostate cancer have been identified in the study (Figure 2), five of which have previously been defined for breast, colorectal & lung cancers.[ii] Active surveillance and watchful waiting is an additional phase unique to prostate cancer. Using incidence, survival, prevalence and mortality data, data from the British Association of Urological Surgeons and clinical assumptions we make indicative estimates of the number of people in phases of the care pathway. Full detail of calculations will be in a forthcoming paper.

Figure 2: Assumptions used to estimate the cancer care pathway



Results & Discussion

We present new 2010 estimates for prostate cancer and comparative figures for breast, colorectal and lung cancer (Figure 3). The number of patients going through the care pathway in a specific year with prostate cancer is estimated to be around 266,000 in 2010 (including flows in and out). Around a fifth are either receiving treatment or in the recovery and readjustment phase. The majority (over half) are in the post treatment monitoring phase. We estimate over 1 in 10 have not received any anti-cancer treatment, a further 1 in 10 have developed metastatic disease and around 1 in 25 are in the final stage of their lives. The progressive disease phase accounts for a greater proportion of the total patient population in prostate cancer compared to breast and colorectal cancers.

Figure 3: Cancer care pathway – estimating the number of people in the UK, by cancer type, 2010

Even though the most expensive phases of prostate cancer care are immediately after diagnosis and within the last year of life,[iii] the majority of prostate cancer patients, as demonstrated in this study, are in the post treatment monitoring group. Maddams *et al*. showed that prostate cancer survivors had the highest levels of health service utilisation five or more years after diagnosis compared to other cancer patients[iv] and more recent work confirms that most costs are incurred the years after initial diagnosis.[v]

Conclusion

The current focus of cancer care is on initial diagnosis, primary treatment and the last year of life, yet for most prostate cancer survivors, their health care service demands are likely to resemble those of patients with chronic conditions. Greater involvement of general practitioners, with appropriate support from hospital based specialists may potentially provide relief to this pressure and improve the management of long-term chronic side effects due to patients' previous cancer and its treatment.

The balance between the post treatment monitoring and active surveillance/watch and wait groups will be an important determinant in terms of resource allocation for prostate cancer survivors in the future. We hope our estimates stimulate future work to collect quantitative data related to the health care needs of patients at each stage of their cancer, and be used to plan future services to meet the needs of these patients.

Data notes

Figure 1: Prostate cancer (ICD-10 C61). Incidence is the number of newly diagnosed cases and is a count of tumours in 2010. Prevalence is a count of the number of people living with cancer at the end of 2010. Mortality is a count of deaths due to cancer only in 2010. In addition a number of men living with prostate cancer will die from other causes **Sources:** Office for National Statistics; Information Services Division (ISD) Scotland; Welsh Cancer Intelligence & Surveillance Unit; Northern Ireland Cancer Registry; Cancer Research UK. Cancer mortality - UK statistics (Nov 2010); Maddams J, et al. Cancer prevalence in the United Kingdom: estimates for 2008. British Journal of Cancer. 2009. 101: 541-547.

Figure 3: For each cancer type, the size of the boxes reflects the approximate proportion of people in each phase (however, there is double counting for people who are diagnosed and die in the same year). Female breast cancer (ICD-10 C50), Prostate cancer (ICD-10 C61); Colorectal cancer which includes colon, rectum and anus (ICD-10 C18-C21), and Lung cancer which includes lung, bronchus and trachea (ICD-10 C33-C34). **Sources:** Estimated based on Maddams, J, et al, Projections of cancer prevalence in the United Kingdom, 2010-2040. Br J Cancer, 2012. 107(7): p. 1195-202; Maddams J, et al. (2009); Office for National Statistics and London School of Hygiene and Tropical Medicine. 2012. Cancer Survival Rates - Cancer Survival in England: Patients Diagnosed, 2006–2010 and Followed up to 2011; Cancer Research UK (2010) Cancer mortality – UK statistics; Personal Communication for incidence trends from Office for National Statistics, Information Services Division (ISD) Scotland, Northern Ireland Cancer Registry, Welsh Cancer Intelligence and Surveillance Unit.

Acknowledgements

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References

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