

How do we tackle social injustice in urological cancer?

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Socioeconomic status as an established determinant of health and associated injustices is well recognised. Confronting these injustices and creating a fairer healthcare system is an ongoing challenge for many governments.

In Scotland, the devolved government has created the Scottish Index of Multiple Deprivation (SIMD), which ranks postcodes from the most to the least deprived in the country based on seven domains including housing, crime and income [1]. The creation of the SIMD was based on the desire to improve understanding of the impact living in the most deprived areas of Scotland has on people's lives [1]. Gaining an understanding of the characteristics in each area allows strategic targeting of health and social policies to help support areas with the greatest need [1]. These targets are dynamic, and the distribution of deprivation has varied with each iteration of the index since its initial publication in 2012 [1]. The SIMD has proved to be an excellent resource for researchers across multiple specialties to help investigate the nuances of pathologies and identify patterns in diagnosis, treatment and prognosis. Recent work in our unit has utilised the SIMD to assess prostate cancer care in over 2000 patients who received active treatment, but the influence of social deprivation and associated injustices is relevant to all urological cancers.

Mortality rates for all cancers are highest in the most deprived areas and bladder cancer, along with oesophageal, has the most striking disparity, with an 8.9% difference in one year mortality rates between the most and least deprived areas [2]. Investing in further understanding social deprivation and supporting the most deprived areas in society could help reduce cancer-associated mortality as well as allowing costly NHS resources to be distributed equitably. For example, low socioeconomic status has been associated with higher rates of more advanced prostate cancer diagnoses [3]. This tends to result in patients requiring more aggressive curative treatments or prolonged periods of costly treatment that can often ultimately become palliative. This puts a strain on resources as well as negatively impacting patients. However, the complex role of socioeconomic status in urological cancers is highlighted by the fact that, despite having lower mortality rates, the actual prostate cancer incidence rates tend to positively correlate with socioeconomic status [4]. Preliminary results from our unit have also suggested a positive correlation in those who receive active treatment



and in particular surgical treatment. Furthermore, the role of socioeconomic status in urological cancers is relevant to all age groups and not just elderly patients, the age demographic in which most cancers are diagnosed. Studies have shown that socioeconomic status during childhood can influence the risk of urological cancers later in life [4]. This highlights the influence of stressors that people are exposed to in different socioeconomic backgrounds as well as likely biological differences and behaviours adopted.

The role socioeconomic status plays in the care of urological cancers is an interesting topic and our

understanding is continuing to evolve as new associations continue to be unearthed. However, what can be done to utilise this understanding now? How do we tackle social injustice in urological cancer care and improve prognosis for patients from the most deprived areas? Initial results from our unit appear to suggest that social deprivation mainly influences urological cancers in the pre-diagnostic phase with care being largely consistent once a diagnosis and management decision has been made.

Putting a focus on patient education that is in an accessible format is an important consideration. There is an association between lower levels of literacy and an awareness of cancer symptoms, resulting in later presentations in this patient group [2,5]. Patients need to be aware of the various urological signs and symptoms associated with each malignancy. Whilst all patients are generally proactive when it comes to visible haematuria, other more subtle signs and symptoms are more likely to be disregarded in patients, especially men, who have not received or have less accessible health education. This may explain why cancer incidence rates tend to increase in less deprived areas as patients are often more engaged in their own health. Importantly, education does not appear to influence response to cancer management, with this being similar across all educational backgrounds when cancer characteristics match [3]. However, people from the most deprived areas are typically less engaged in follow up once their urological cancer has been treated [6]. Also, lower education has been associated with higher rates of non-active treatment in urological cancers [7]. Why is this the case? In addition to a higher likelihood of presenting with more aggressive and higher stage disease, there are many confounding factors which can influence the

role of education status in urological cancer management. For example, patients from low education backgrounds are more likely to have poor health in general and thus a higher burden of significant comorbidity [3,5]. Lower educational status has been associated with a 64% increased risk of multimorbidity [8]. Such comorbidities may contraindicate radical cancer management options such as cystectomy. Additionally, those suffering from chronic diseases may have had restricted access to educational opportunities throughout life [3].

There are several measures that can be taken to reduce discrepancies in health literacy and specifically awareness of urological cancers. Targeted social media campaigns are an excellent method of raising awareness and reaching a wide range of people across society, especially as new generations continue to spend more time online. Recruiting celebrities to such campaigns is often an effective way of engaging people across all socioeconomic backgrounds. These campaigns tend to be perceived as more relevant to people versus faceless campaigns with the same message. For example, there is often a temporary spike in men attending primary care and requesting their prostate specific antigen (PSA) level after a celebrity has revealed a prostate cancer diagnosis. However, the driver for presentation in this cohort of men tends to be fear rather than an awareness of specific urological signs and symptoms. Whilst diagnosing asymptomatic cancers at the earliest stage is ideal for patients, targeting education towards the cohort of patients who have new and / or progressive urological symptoms offers the most efficient use of funds, especially in prostate cancer where active surveillance is an option. Other education methods include organising health information events in schools within deprived areas to help instil an awareness of urological pathology at an early stage and ensure proactive behaviours if faced with such issues later in life. Also, collaborating with local businesses and sports teams could provide a platform to be heard by people in more deprived areas. The ultimate aim is to educate patients on urological cancer to a level that is consistent, regardless of socioeconomic background. This will help ensure patients present before experiencing more systemic symptoms secondary to higher-stage, and sadly often incurable, disease, which is currently more prevalent in deprived areas.

It is evident that socioeconomic status has an influence on comorbidity burden, that can in turn impact suitability for various oncological treatments [3]. This issue is becoming more prominent and greater NHS time and resources are spent on managing long-term conditions. In 2022, the prevalence of a limiting long-term condition reported by people in Scotland increased to 37% compared to 26% in 2008 [9]. Furthermore, people's perspective on their own health is more negative in the most deprived areas, with only 55% of people reporting it as "good" or "very good", compared to 81% in the least deprived areas [9]. A particular issue in our region is cardiovascular disease that contraindicates surgical management of urological cancers given the associated lower physiological reserve and higher anaesthetic risk. Curative operations for urological cancers tend to be a major undertaking and put a significant strain on a patient's physiology. Patients from more deprived areas often have less access to higher quality nutrition and instead are exposed to an abundance of highly processed foods that are high in sugar and fat. This puts a tremendous strain on the health service, accelerating the development of cardiovascular disease and its associated complications. Measures have already been taken to improve the nutrition of future generations. These include the sugar tax, censoring fast food advertisements on television and improvement of school meals. Continued work and funding are still required to improve

the nation's cardiovascular health and increase physiological reserve, so that we have the option of more radical treatment options for urological cancers.

Smoking is another lifestyle-associated cardiovascular risk factor that is more prevalent in people from lower socioeconomic backgrounds. Cigarette smoking has been reported to be four times higher in the most deprived areas compared to the least [2]. Smoking status is also a well-known independent risk factor for developing urological cancers and its association with bladder cancer is particularly well established. Whilst the overall rates of smoking have been on a downward trend in Scotland since the ban on smoking in enclosed public spaces was introduced in 2006, there is still a significant deprivation discrepancy [9]. In 2022, rates of cigarette smoking in the most deprived areas in Scotland was 25% compared to 7% in the least deprived [9]. Tackling this discrepancy will be particularly challenging and is likely, in part, a reflection of behaviours being passed down through generations. Many proactive steps have been taken to bring down smoking rates, such as the ban on smoking in public spaces, restriction of advertising, educational programmes and strict rules on packaging. However, the inverse relationship between social deprivation and smoking rate can likely only be levelled off by challenging poverty and ingrained behaviours within families and social groups. The use of e-cigarettes continues to become more common, particularly in younger age groups. Whilst promoted as a useful cessation device, the long-term implications of e-cigarettes on urological cancer development are yet to be determined.

In many countries, but particularly in Scotland, there are geographical discrepancies in availability of healthcare, with the least deprived areas tending to have easier access to specialised care [2]. Most centres which offer complex urological surgery for cancer are localised within the central belt. Whilst greater investment in this area is necessary given that is the most populous region, many patients in more deprived areas further north and on the islands are not offered the same access to healthcare. Patients may not have a means of transport to reach a major centre to undergo their treatment for a urological cancer [2,10]. They instead are reliant on smaller rural hospitals with limited resources. A balance should be struck between investing in major centres with high patient flow to provide world class innovative urological care, and also still distributing resources fairly across the country. This will ensure that the most deprived rural areas are not unfairly disadvantaged due to their geography. To achieve this there should be greater collaboration between health boards. In the West of Scotland steps have been taken in this direction in recent years with the expansion of the Regional Prostatectomy Service. More units have received funding for robots and now robotic prostatectomies can be offered at centres across the region, whereas before all patients were treated in Glasgow. This step has helped to reduce geographical inequalities in urological cancer care and helps minimise social health inequalities.

In conclusion, while there have been improvements, there is still social injustice in the care of urological cancers. Much is still to be explored in the role that social deprivation plays in urological cancer pathogenesis, diagnosis and management. We have summarised some key current issues and suggested methods to help minimise their influence. We want to reduce discrepancies in urological cancer management between the most and least deprived areas of society. As such, we will continue our investigation into the role of social deprivation in urological cancer to improve our understanding, promote positive steps in patient behaviours and encourage government policy changes.

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- Investing in further understanding the impact of social deprivation and supporting the most deprived areas could help reduce urological cancer associated mortality and allow costly NHS resources to be redistributed more equitably.
- Patients from the most deprived areas tend to have a higher likelihood of presenting with more advanced urological cancers which can be incurable.
- Improving health literacy is key to reducing the impact of social deprivation on the diagnosis of urological cancers and encouraging patients to engage in their own health.
- Curative operations for urological cancers tend to put a significant physiological strain on patients and those from the most deprived areas often have comorbidities which significantly increase the associated risks of such operations.
- Behavioural risk factors for urological cancers such as smoking are often associated with greater social deprivation and such ingrained behaviours in families and social groups are proving challenging to disrupt.
- Greater collaboration across health boards is required to offer easier access to specialist urological cancer care in the most deprived areas.

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Declaration of competing interests: None declared.