

Implications of celebrity endorsement of prostate cancer awareness in a tertiary referral unit- The “Fry-Turnbull” Effect

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Media portrayal of celebrity experience of cancer is associated with greater public interest and increased internet search activity. Heightened public awareness of cancer affects referrals to secondary or tertiary care services. This is exemplified by publicity surrounding Angelina Jolie’s preventive double mastectomy because of a strong family history positive for breast cancer and BRCA1 gene mutation. This resulted in a doubling of referrals to UK regional breast cancer services between 2012 and 2013(1). Increased concern does not necessarily translate into heightened understanding of individual risk of disease. Qualitative studies have expressed need for purposeful communication to aid public understanding and increase efficiency of referrals and use of diagnostic resources(1).

February and March 2018 saw British media celebrities Bill Turnbull and Stephen Fry announce their diagnosis of prostate cancer (PCa) and describe their treatment journeys(2). Prostate Cancer UK reported a 36% increase in treatment for urological cancer comparing April to July 2018 with the corresponding months in 2017, and a 250% increase in visits to the NHS PCa advice webpage(2).

“We sought to provide a narrative overview, delineating any potential effect on our tertiary referral centre PCa two week wait (2WW) service by undertaking a single-centre, prospective, observational longitudinal study over 32 months from January 2017 to August 2019. Data assimilated into a central database was evaluated with specific attention to analysis of referral rates, diagnostic investigations and treatments (active surveillance (AS), surgery, hormone and radiotherapy or “other”). Descriptive statistics were reviewed to identify changes before and after February 2018.”

Mean referral rate in 2017 was 105 patients/month, with a 29.7% increase to 136.2 patients/month (SD 42.8) in 2018, followed by a 30.5% decrease to 95.3 patients/month (SD 11.3) in the first eight months of 2019. On examining the monthly trend (Figure 1) there was an increase in referral rates in March to May 2018 compared with 2017, with a maximum of 230 referrals in March 2018 compared to 120 February (>90% increase). Average referrals remained slightly higher for the remainder of 2018, 112 patients/month, but declined thereafter. Average referral rate for the first 6 months of 2019 was 96 patients/month, lower than 2017, although this may reflect a change to the 2WW referral criteria, requiring GPs to perform two PSAs, to confirm a rise, before referral.

During 2017, 1080 patients underwent MRI to investigate possible PCa compared with 1314 patients in 2018 (mean 109.5 patients/month, SD 35.6). There was a clear increase in diagnostic MRIs performed in March to May 2018 (Figure 1), though proportionately fewer MRIs were undertaken than patients referred to the 2WW

pathway, suggesting that a number of these men were the “worried well” and were screened out at initial contact. A similar trend was observed in men undergoing diagnostic prostate biopsy in April to June 2018 (361 men), compared with January to March 2018 (268 men), a 34.7% increase.

Rise in diagnostic investigations was associated with a transient increase in both number of PCa diagnoses and patients undergoing management (including AS) between April 2018 and June 2018 (Figure 1). Interestingly, 50% more men were allocated to AS in the 3 months after February 2018 compared to the corresponding months of 2017 (mean 13 versus 7.7 patients/month). The rate of men undergoing robot-assisted radical prostatectomy (RARP) rose by 25% from 15 patients/month in the period April to June 2018 to 20 patients/month in the period August to October 2018 (2018 monthly average= 18). This was higher than in the corresponding period of 2017 (18.3 patients/month August -October 2017). Overall, this demonstrates a small but important increase in the number of radical treatments performed, reflecting pick-up of cancers that may otherwise have been missed without the celebrity intervention. An alternative explanation, given the subsequent fall in radical treatments, is that the intervention brought forward men who would otherwise have presented later.

Celebrity endorsement of cancer awareness and screening can result in heightened public use of healthcare resources and referral pathways. Whether this increase is among individuals who stand to benefit most from investigation is uncertain. This prospective data analysis demonstrates how greater media coverage of PCa had an important effect on patients and 2WW referral service provision. A rise in referrals had down-stream effects on of MRI and biopsy investigations. This may reflect that some referred men fell into the category of “worried-well” who did not require, or declined, biopsy. The rise in PCa diagnoses resulted in increased allocation to AS programmes, demonstrating that an additional effect of heightened public awareness is greater detection of clinically insignificant PCa not requiring immediate treatment. Findings are in-keeping with the National Prostate Cancer Audit (NPCA) of 2018, reporting data from April 2016 to March 2017, that ascertained a reduction in overtreatment of low-risk disease for which AS would be recommended management (8% to 4%)(3). This also showed an increasing proportion of men presenting with locally-advanced disease (39% of new diagnoses in England 2016-2017) requiring radical treatment whereas men diagnosed with metastatic disease at presentation has been stable at 16% over two years. Our analysis mirrors this finding as a further legacy of the increased rate of referrals from the Fry-Turnbull effect is demonstrated through the rise in men undergoing surgical management. This highlights that media portrayal of celebrity experience has important repercussions for the clinical management of patients, through increased detection of clinically significant disease requiring active management.

UK-wide data demonstrates a national decline in achieving the “62-day to treatment” national target for cancer(4). Surges in publicity regarding cancer place additional pressures on delivery of diagnostic and therapeutic services. Within our institution the “Fry-Turnbull” effect necessitated change at divisional level, with a 50% uplift of diagnostic and MRI capacity. Additionally, the physical and psychological burden of PCa

investigation on patients should be considered. Complications from prostate biopsy are well-known with concern regarding urinary tract infection, sepsis and contribution to antimicrobial resistance which is set to overtake cancer in global mortality by 2050(5, 6). Furthermore, MRI and subsequent negative biopsy result has an important effect on worry and mental health, as described by McNaughton-Collins et al, highlighting the “under-recognised human cost” of investigations(7).

This overview reflecting the effect of celebrity endorsement on public awareness and subsequent health-service provision may be subject to ecological fallacy. Findings may not necessarily be extrapolated nationally, as this single-centre analysis encompassed a particularly highly-educated patient population. Patients may have had heightened awareness of celebrity endorsement of cancer screening. Conversely, there may already have been a greater awareness of PCa risk factors and investigation, minimising the “Fry-Turnbull” effect compared to other geographical locations.

Critically, whether celebrity interventions are thought to have positive or negative repercussions, considering the above findings, clinicians and managers must be prepared for effects on cancer referral pathways and service provision and plan accordingly.

#### CONFLICTS OF INTEREST:

The authors have no conflicts of interest to declare

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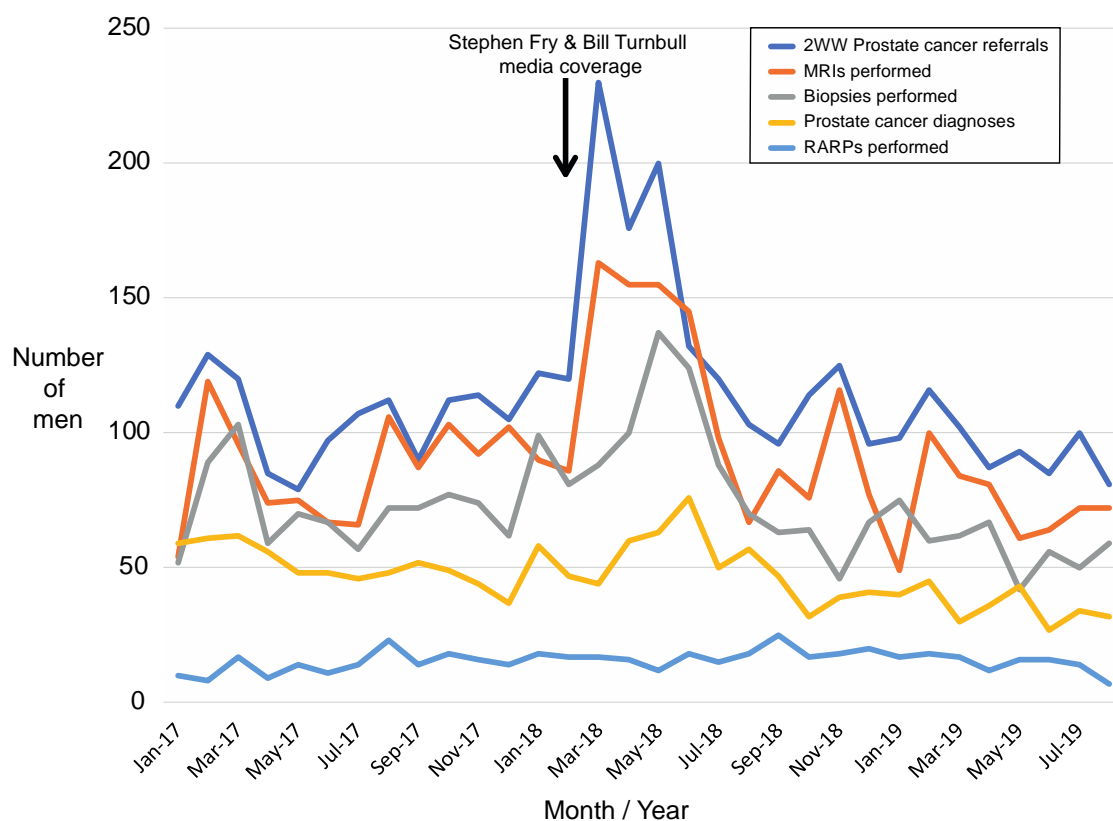


Figure 1. Patients on prostate cancer referral pathway to Oxford University Hospital NHS Foundation Trust. (2WW- Two week wait, MRI- Magnetic resonance imaging, RARP- Robot assisted radical prostatectomy)