

Impact case study (REF3)

Institution: Keele University		
Unit of Assessment: UoA4 Psychology, Psychiatry and Neuroscience		
Title of case study: Informing policy and increasing knowledge related to the health consequences of HPV for males and females		
Period when the underpinning research was undertaken: 2012 - date		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr Sue Sherman	Senior Lecturer	2005 - present
Period when the claimed impact occurred: 2015 - date		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>Human papillomavirus (HPV), a common sexually transmitted infection, which has no treatment, causes ~5% of cancers (e.g., cervical, anal, oropharyngeal). Since 2008, the UK has offered HPV vaccination to girls, and, after much lobbying, to boys from Sept 2019. Sherman's programme of research, developed with clinicians and charities, contributed to the government's u-turn over gender neutral HPV vaccination and underpins European guidance. It has informed healthcare professional (HCP) education, leading to the revision of Public Health England (PHE) materials and has been used to educate the public about HPV through media engagement and informing charity and health authority communication strategy.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>Sherman, Senior Lecturer and academic lead for the School of Psychology's Health and Wellbeing Research Group (HWB), has conducted research into issues surrounding knowledge about HPV and related conditions for the past 9 years. HWB promotes collaborative research: members work with clinicians, charity representatives, academics, and patients, both nationally and internationally. Sherman's work focuses on how improving knowledge in HCPs, parents of teenage children, and women can increase engagement with vaccination and screening.</p> <p>The underpinning research emerged during a highly charged political debate in the UK about extending HPV vaccination to boys. Simultaneously, the NHS cervical screening programme (NHSCSP) piloted, then rolled out, HPV testing as primary screening to replace cytology (examining cervical cells for pre-cancerous changes). Sherman's research provided a solid evidence base on public and HCP knowledge about HPV and attitudes towards these changes to inform communication and implementation. It continues to inform the roll-out of gender-neutral vaccination across Europe.</p> <p><u>HPV and HPV Vaccination:</u> Sherman's Wellcome-funded study in PLOS ONE (3.1) demonstrated: a) only 50% of parents sampled have heard of HPV, and only 50% have heard of the HPV vaccine, b) before receiving information about the vaccine most of the 50% who had heard of it wanted it to be available for boys, c) after brief information was provided to the entire cohort (including those who had not previously heard of it) most parents thought the vaccine should be extended to boys. This was the first UK study to find out what parents know about HPV and males and what they think about HPV vaccination for boys. It was influential because it demonstrated public demand for a vaccine but simultaneously a lack of public knowledge about the health consequences of HPV for males.</p>		

Sherman and Leicester NHS Trust colleagues published a systematic review exploring what European adolescents know about HPV and HPV vaccination (**3.2**). Knowledge about both HPV and the vaccination was suboptimal. Boys know less than girls, which has implications for engagement with gender-neutral HPV vaccination as it is introduced across Europe.

HPV and cervical screening:

Working with gynaecological oncologists from Royal Stoke and Leicester NHS Trusts, and an epidemiologist from King's College London, Sherman pitched to and published an article in the BMJ highlighting that 20% of new cervical cancer diagnoses and 50% of deaths in the UK are women aged 65+ who are past the eligible age for cervical screening (**3.3**). This article attracted considerable attention nationally and internationally.

Sherman, alongside colleagues at Leicester NHS Trust, Jo's Cervical Cancer Trust (Jo's Trust), and in New Zealand, conducted a series of surveys (**3.4**, **3.5**) to understand what HCPs know about HPV, HPV vaccination, and changes to the NHSCSP. The findings consistently reveal that while basic knowledge is satisfactory, gaps in knowledge exist, particularly regarding changes to the NHSCSP and knowledge of the health consequences of HPV for males. The main UK study (**3.4**) recruited 643 HCPs who had previously contacted Jo's Trust and has been used to inform Jo's Trust advocacy work and update PHE training materials.

3. References to the research (indicative maximum of six references)

The underpinning research as a whole is of at least 2* quality. Rigour: it is all published in well-respected peer reviewed journals and **3.1** was funded by Wellcome. Significance: the 6 references have been cited 124 times, including by researchers across the world including in the US, Europe, China, Brazil and so on. **3.2** is included in a Cochrane Systematic Review. Originality: for example, **3.4** & **3.5** are the first comprehensive evaluations of HCP knowledge in the UK and New Zealand.

- **3.1** Sherman, S. M. & Nailer, E. (2018). Attitudes towards and knowledge about Human Papillomavirus (HPV) and the HPV vaccination in parents of teenage boys in the UK. PLOS ONE 13(4): e0195801. (JCR IF 2019: 2.740)
- **3.2** Patel, H., Jevé, Y. B., Sherman, S. M., Moss, E. L. (2016). Knowledge of Human Papillomavirus and the Human Papillomavirus Vaccine in European Adolescents: A Systematic Review. Sexually Transmitted Infections, 92, 474-479. (JCR IF 2019: 3.396)
- **3.3** Sherman, S. M., Castanon, A., Moss, E., & Redman, C. W. E. (2015). Cervical cancer is not just a young woman's disease. British Medical Journal, 350:h2729. (JCR IF 2019: 30.223)
- **3.4** Sherman, S. M., Cohen, C., Denison, H., Bromhead, C., & Patel, H. (2019). A survey of knowledge, attitudes and awareness of the human papillomavirus among HCPs across the UK. European Journal of Public Health, 30, 10-16. (JCR IF 2019: 2.391)
- **3.5** Sherman, S. M., Bartholomew, K., Denison, H. J., Patel, H., Moss, E. L., Douwes, J., & Bromhead, C. (2018). Knowledge, attitudes and awareness of the human papillomavirus amongst health professionals in New Zealand. PLOS ONE, 13(12): e0197648. (JCR IF 2019: 2.740)
- **3.6** Moss, E. L., Sherman, S. M., Pearmain, P., & Redman, C. W. E. (2012). The NHS cervical screening programme audit of invasive cervical cancers: who benefits? BJOG, 119, 1–4. (JCR IF 2019: 4.663)

4. Details of the impact (indicative maximum 750 words)

Sherman's research has generated impact benefiting HCPs and the public by informing and influencing key partners involved in HPV vaccination and screening, including: PHE, Jo's Trust and HPV Action. Impact has been achieved through inclusion in national and international materials and guidance documents, invited practitioner workshops and talks, and media engagement.

1. Shaping government policy and decision making, UK, Europe, New Zealand

HPV Vaccination:

The European Cancer Organisation (ECCO, 2019) stated that “By 2030, gender-neutral vaccination programmes against the HPV infection should be in place in all European countries”. Sherman’s research forms part of the evidence used to encourage governments to meet this goal.

In 2018, after 5 years of evidence gathering, the Joint Committee on Vaccination and Immunisation (JCVI) advised the UK Government to extend the school-based HPV vaccination programme to boys and the Government agreed. **3.1** findings were submitted to the public phase of the JCVI consultation and Peter Baker, Campaign Director of HPV Action, who spearheaded the successful campaign for gender-neutral vaccination, confirms **3.1** “formed a significant part of the evidence base underpinning this policy change” (**5.1**). The vaccination is estimated to benefit 400,000 boys annually.

Currently, 17 countries in Europe lack gender-neutral HPV vaccination. In 2020, the European Centre for Disease Prevention and Control published guidance about gender-neutral and nonavalent HPV vaccination citing **3.2** as evidence (**5.2**).

Cervical Screening:

Based on **3.6**, a New Zealand National Cervical Screening Programme (NCSP) report recommended that the NCSP continue to monitor cancer incidence trends in women under 30, with an emphasis on “engaging women with a high coverage rate at age 25” (**5.3**).

2. Improving HCP knowledge

HPV and HPV Vaccination:

Following **3.3**, Nursing in Practice (circulation:12,000), commissioned an article with learning points about HPV from Sherman (**5.4**). Sherman gave an invited gender-neutral HPV vaccination workshop at the 2019 School and Public Health Nurses Association conference. Greater Manchester Health & Social Care Partnership (GMHSCP) invited Sherman to present at their Universal HPV vaccination launch event (**5.5**). 80-100% of respondents from each event said they had/intended to use the information to inform their own practice and to disseminate the information further.

3.4 was cited as underpinning evidence for a call to improve public and professional awareness and education about HPV in a major report by ECCO urging action to reduce the annual 87,000 HPV-related cancers across 50 countries (**5.6**).

HPV and cervical screening:

Jo’s Trust use **3.4** to advocate for and deliver training to HCPs (**5.7**) and PHE used **3.4** to update smear taker online training materials (see screenshot).

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Unit 4: Communication

NHS

Further information on HPV primary screening for healthcare professionals and women/Resources

What is HPV? - NHS

Human papillomavirus (HPV) | Jo's Cervical Cancer Trust

'Test your knowledge' and 'Questions you may be asked and possible answers' were taken from the following publications:

[Anxiety and distress following receipt of results from routine HPV primary testing in cervical screening: The psychological impact of primary screening \(PIPS\) study](#)

[A survey of knowledge, attitudes and awareness of the human papillomavirus among healthcare professionals across the UK](#)

3. Raising public awareness and improving understanding

PHE (2017) seeks to halt declining cervical screening numbers and protect against future fluctuations in HPV vaccination. Public knowledge and awareness about HPV, vaccination, and screening are important to ensure optimal engagement with the programmes. A campaign of media activity (2015-2020) has led to Sherman's research being disseminated to over 20 million people (5.9) and it has informed NHS and charity communications.

HPV and HPV Vaccination:

3.1 informed development of the GMHSCP communication strategy for the expansion of the HPV vaccine programme to boys (5.5) and informed Jo's Trust's interactions with the 4 nations' national screening programmes to advocate for language around gender-neutral vaccination (5.7). Following 3.1, Peter Baker (HPV Action) invited Sherman onto the expert advisory group which helped develop the website launched to inform the public about male HPV vaccination (5.1).

A Conversation article (5.8) about 3.1 received 7,082 readers, 23 comments, 70 retweets, 247 Facebook shares, was republished by Medical Xpress, and Radio Stoke (weekly audience 121,000) interviewed Sherman about the research. Following publication of 3.4 and the announcement of universal HPV vaccination, further media interviews took place (5.9). Social media activity around Sherman's publications indicate considerable reach. 3.1: 82 tweets from 59 users, reach-404,522; 3.2: 42 tweets from 22 users, reach-58,915 (Altmetric).

HPV and cervical screening:

3.3 received extensive national and international media coverage during Cervical Screening Awareness Week, including the Today Programme, Woman's Hour, BBC 5 Live (combined daily listeners: 8 million), national print newspapers including the Metro, Daily Mirror, i, Daily Express, Independent, Telegraph, Times, frontpage of The Scotsman (combined daily readership, 2015: 3.3 million) (5.9), and a BBC Breakfast Show interview (5.9). There were 40+ pieces of regional coverage, international coverage in 14+ countries and the BMJ identified it as one of their biggest stories of 2015 (5.10). Jo's Trust confirmed that 3.3 significantly amplified their own awareness campaign and has been influential in focusing a spotlight on the issue of cervical screening for older women (5.7).

5. Sources to corroborate the impact (indicative maximum of 10 references)

5.1 Testimonial from Peter Baker, Campaign Director of HPV Action, referring to the importance of Dr Sherman's research.

5.2 Document published by European Centre for Disease Prevention and Control. Guidance on HPV vaccination in EU countries: focus on boys, people living with HIV and 9-valent HPV vaccine introduction. <https://bit.ly/3ozCDOu>

5.3 Advice and recommendations made to the Ministry of Health regarding the National Cervical Screening Programme by the independent review team based at the University of Otago, Christchurch. <http://bit.ly/3coJkN6>

5.4 Commissioned piece about HPV for Nursing in Practice: <http://bit.ly/2VEznoK>

5.5 Testimonial from Steven Senior from Greater Manchester Health and Social Care Partnership.

5.6 Baker P, Kelly D, Medeiros R (2020). Viral Protection: Achieving the Possible. A Four Step Plan for Eliminating HPV Cancers in Europe. European Cancer Organisation; Brussels. <https://bit.ly/2HlqdK9>

5.7 Testimonial from Kate Sanger, Head of Communications and Public Affairs at Jo's Trust

5.8 Piece in The Conversation by Dr Sherman with extracts of comments: <http://bit.ly/2Tii4IJ>

5.9 Spreadsheet detailing some of Dr Sherman's media coverage and including link to BBC Breakfast Show interview with Dr Sherman about cervical screening in older women

5.10 BMJ in the news: round up of 2015: Over 65s should be screened for cervical cancer <https://bit.ly/3jGKea6>