EPH199

Public Health Impact of Herpes Zoster Vaccination in Immunocompromised Adults Aged 18-49 Years in The United Kingdom

Vaccination with RZV could substantially **reduce the HZ-related burden** in adults aged **18-49 years with an IC condition** in the **UK**

Digital poster

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Background

- **Herpes zoster (HZ)** results from the **reactivation of latent varicella zoster virus**, acquired previously in life.[1, 2]
- **The risk of HZ increases** with **age** and presence of **immunocompromising (IC)** conditions.[3-5]
- **Post-herpetic neuralgia (PHN)**, a painful condition that can last for years, is the **most common** complication of HZ and is described as pain that persists for 90 days or more after the onset of a HZ rash.[6-8]
- In 2025, the **recombinant zoster vaccine (RZV)** was recommended by the Joint Committee on Vaccination and Immunisation for inclusion in the **United Kingdom (UK) Shingles National Immunisation Programme** for **IC adults** aged **≥18 years**.[9]

Objective

To evaluate the **potential public health impact of RZV introduction** in adults aged **18-49 years** with Haematopoietic stem cell transplantation (HSCT – base case analysis) or any of the **four** following other **IC conditions** (scenario analyses):

- Haematological malignancies (HM)
- Human immunodeficiency virus (HIV)
- Solid organ transplant (SOT)
- Solid organ malignancy (SOM)

Methods

- The **ZOster ecoNomic Analysis (ZONA) model[4] for IC individuals** was adapted to the UK setting using data primarily from the UK Clinical Practice Research Datalink (2012-2019).[10-12]
- For each **IC condition**, outcomes in a hypothetical non-vaccinated cohort were **compared to those in the vaccinated cohort, over a 30-year period.**
- **Outcomes** assessed included **HZ cases**, **PHN cases**, **hospitalisations**, **general practitioner (GP) visits** and **number needed to vaccinate to avoid one HZ case.**

Figure 1: Study model*

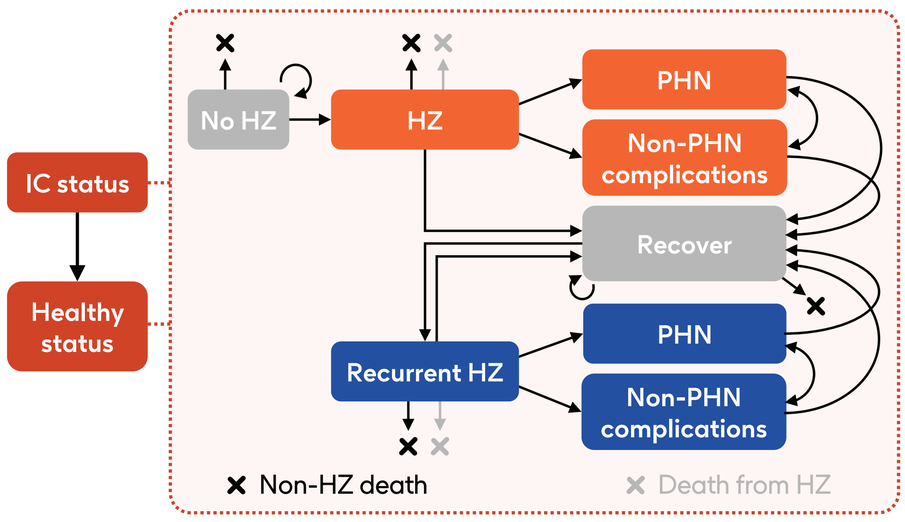


Table 1: Input data[11,12]

	HSCT	HM	HIV	SOT	SOM	Healthy
Time horizon (years)	30					
Cohort size	2,916	51,765	49,577	26,611	241,690	IC cohort transitioning to healthy state
Vaccination starting age (years)	35	25	35	35	45	/
Duration of IC condition (years)	5	Lifetime	Lifetime	Lifetime	5	/
Coverage (%)						
1st dose uptake	60					
2nd dose compliance	50					
Probability of HZ event	0.034	0.006	0.006	0.006	0.004	0.002
Probability of HZ recurrence	0.056	0.052	0.054	0.057	0.033	0.023
HZ cases with PHN (%)	18.9	18.9	18.9	18.9	18.9	14.1
2-dose efficacy against HZ (%)	72.5	87.2	97.8	94.5	96.5	99.4
2-dose efficacy against PHN (%)	96.5	97.6	97.6	97.5	97.6	97.8
Annual waning rate (%)	6.7	3.4	1.3	2.7	2.0	1.2
Mean GP visits per HZ case	2.57	2.57	2.57	2.57	2.57	2.54
Mean hospitalisations per HZ case	0.32	0.32	0.32	0.32	0.32	0.06

Results

Figure 2: Public health impact of HZ vaccination

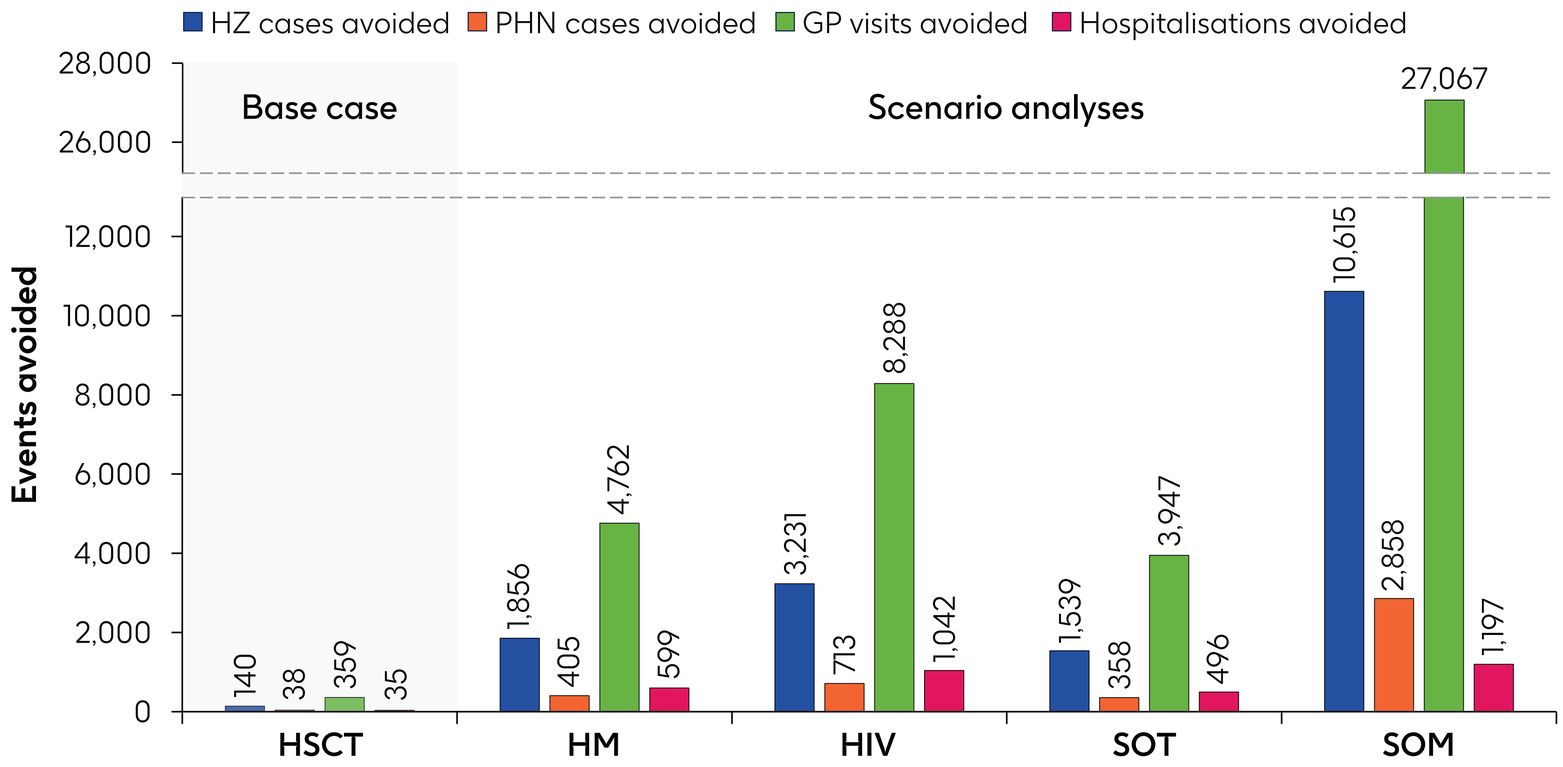
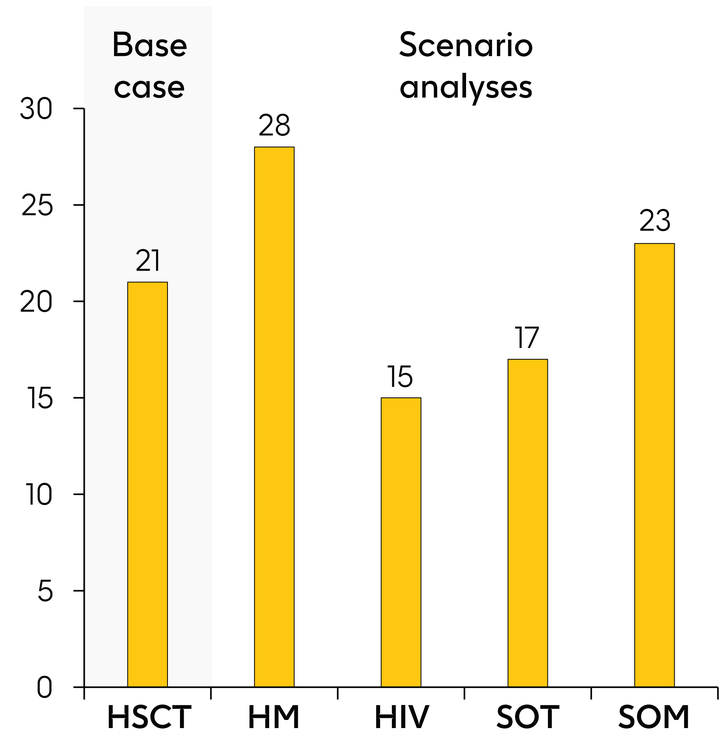


Figure 3: Number needed to vaccinate to avoid one HZ case



- **Main limitation**: in the absence of trial data, regression analyses were used to calculate vaccine efficacy for non-HSCT cohorts.[9]

Abbreviations

GP: general practitioner; **HIV:** human immunodeficiency virus; **HM:** haematological malignancies; **HSCT:** haematopoietic stem cell transplantation; **HZ:** herpes zoster; **IC:** immunocompromising; **PHN:** post-herpetic neuralgia; **RZV:** recombinant zoster vaccine; **SOM:** solid organ malignancy; **SOT**: solid organ transplant; **UK:** United Kingdom; **ZONA:** ZOster ecoNomic Analysis

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Conflicts of interest: All authors are employees of and hold financial equities in GSK. COR also holds financial equities in Pfizer. SF also holds financial equities in Organon and Sanofi. AM is also a Trustee for a mental health charity, Beyond Conflict – Registered Charity Number: 1176499. This is a voluntary unpaid position. YV also discloses financial equities in Haleon. All authors declare no other financial and non-financial relationships and activities.

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