Real-world initiation of recombinant zoster vaccine in U.S. adults 51 years or older: A commercial claims analysis

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Background

Herpes Zoster (HZ), also known as shingles, is caused by the reactivation of varicella zoster virus. In the United states, about 1 out of 3 people will develop HZ in their lifetime and approximately 1% - 4% of people who get HZ are hospitalized for complications. About 10 to 18% of people who get HZ will experience postherpetic neuralgia (PHN), a long-term nerve pain that is the most common and debilitating complication of HZ.[1] In 2030, the annual cost of HZ-related cases in the US population over 65 years old will cost $4.74 billion.[2]

In 2017, Shingrix® (RZV, recombinant zoster vaccine, GSK) was licensed by FDA for adults 50+. The ACIP also recommended RZV to adults 50+, even to those who previously received Zostavax® (Merck), the existing HZ vaccine at the time.[3]

The CDC reported that, from 2008 through 2018, the percentage of adults aged 60 and over who had ever received an HZ vaccine increased by 27.8 percentage points.[4] However, the report was no longer in alignment with the new ACIP recommendation and there was no update after 2018.

Objectives

1. **To describe RZV initiation pattern in a closed cohort**
2. **To examine association between RZV initiation and some prognostic factors**

Methods

Data source: Optum Clinformatics® Data Mart

Population: Enrollees that were 51 years or older in 2017 and were continuously enrolled from August 1, 2016 to October 23, 2017 (index date)

Prognostic factor: Age in 2017, Sex, Race/ethnicity, Baseline (12 months pre) CCI scores, Baseline HZ history, and Influenza vaccination in the 2016-17 flu season

Outcome: RZV initiation (Event of interest); Death (Competing event); Disenrollment/end of follow-up period (December 31, 2021) (Censoring event)

Statistical analysis: Competing-risk analysis

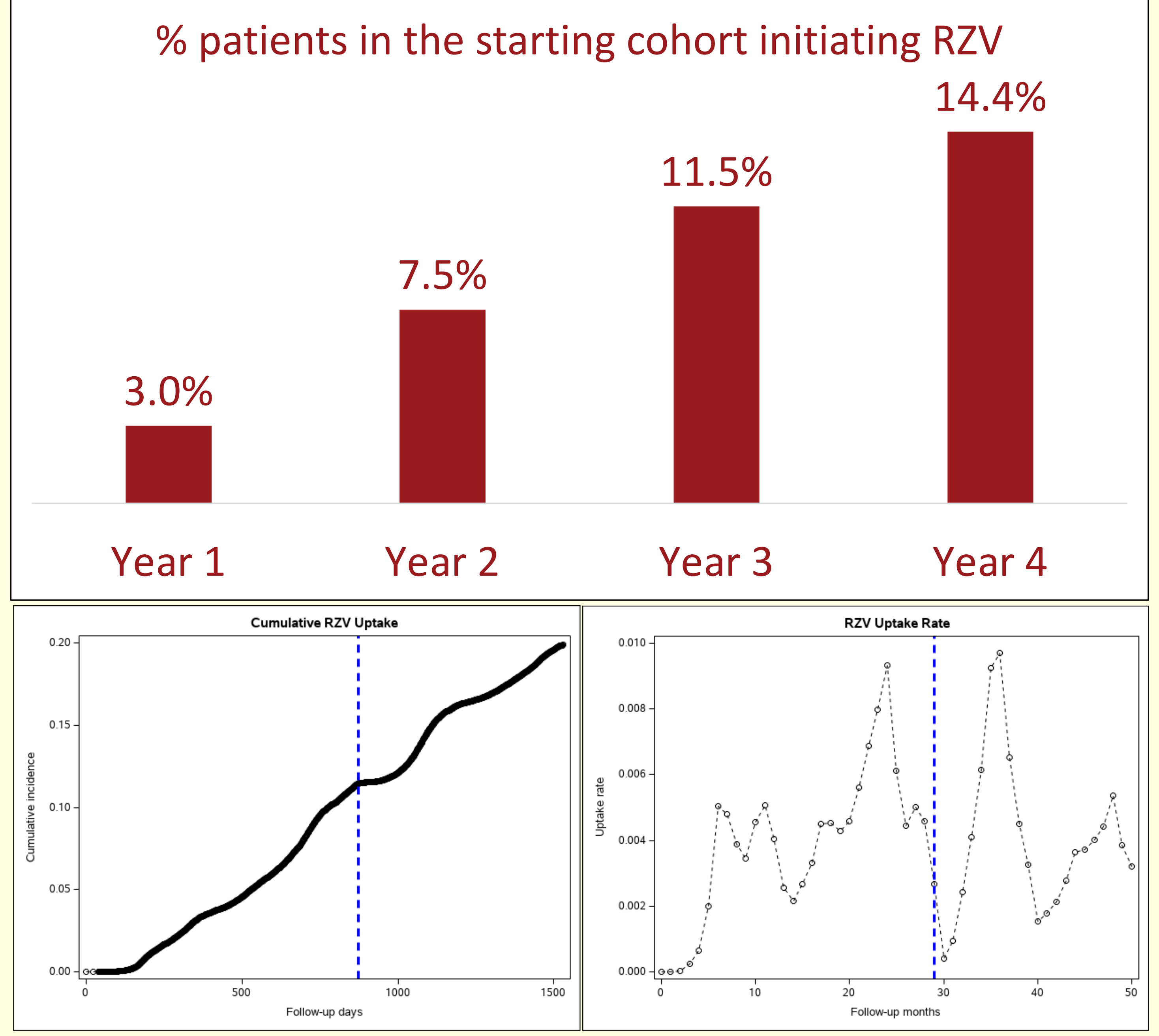
Table 1. Enrollee characteristics

	No. (%)	2017 US population, %
Total population	5,104,523	-
RZV initiation	758,775 (14.9)	-
Death	570,138 (11.2)	-
Follow-up days, means (SD)	996.4 (542.6)	-
Characteristics		
Age, means (SD)	68.6 (10.4)	-
Age group		
51-59	1,234,868 (24.2)	38.6
60-64	632,377 (12.4)	17.4
65+	3,237,278 (63.4)	44.0
Sex		
Male	2,311,081 (45.3)	46.8
Female	2,793,442 (54.7)	53.2
Race/Ethnicity		
White	3,752,799 (73.5)	75.1
Black	557,837 (10.9)	14.1
Asian	200,120 (3.9)	6.6
Hispanic	593,767 (11.6)	18.1
CCI scores in the 12 month before index date		
0	2,426,934 (47.5)	-
1-2	1,485,300 (29.1)	-
3-4	645,180 (12.6)	-
5+	547,109 (10.7)	-
HZ history in the 12 months before index date		
No	5,041,878 (98.8)	-
Yes	62,645 (1.2)	-
Influenza vaccination uptake in the 2016-17 flu season		
No	2,968,361 (58.2)	-
Yes	2,136,162 (41.9)	-

Limitation

- The commercially insured population may not be reflective of the general population.
- HZ history could not be fully examined due to the continuous enrollment constraint.
- Other important SES variables (e.g., income) were not available due to data limitation.

Figure 1. Cumulative initiation, predicted cumulative initiation, and initiation rate by month



Summary

- The commercially insured cohort is relatively comparable to the 2017 US population, despite some differences.
- There is reasonable but suboptimal RZV initiation in this cohort.
- The beginning of COVID pandemic/lockdown policy substantially halted the RZV initiation trend. The rate quickly bounced back and peaked in the following summer but dropped again in the winter.
- People that were older, female, Asian/non-Hispanic white, healthier, had HZ in the past 12 months, and received influenza vaccine in the 2016-17 flu season were more likely to initiate RZV.

Table 2. Factors associated with RZV initiation

	Hazard Ratios (95% CI)
Age group	
51-59	Reference
60-64	1.245** (1.236-1.255)
65+	0.720** (0.716-0.724)
Sex	
Male	Reference
Female	1.075** (1.070-1.080)
Race/Ethnicity	
White	Reference
Black	0.736** (0.730-0.742)
Asian	1.151** (1.139-1.164)
Hispanic	0.733** (0.727-0.739)
CCI scores based on the past 12 month	
0	Reference
1-2	0.909** (0.904-0.914)
3-4	0.752** (0.747-0.758)
5+	0.584** (0.579-0.589)
HZ history in the past 12 months	
No	Reference
Yes	1.175** (1.153-1.198)
Influenza vaccination uptake in the 2016-17 influenza season	
No	Reference
Yes	2.730** (2.717-2.744)

Reference

[1]https://www.cdc.gov/shingles/surveillance.html
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