

Using their definition of PRR

$$\frac{a/(a+b)}{c/(c+d)}$$

assume that the denominator is constant because the comparison vaccine is more safe and that the numerator is approximately

$$\frac{a}{b}$$

because $a \ll b$

$$a = w + y = \text{total deaths} = 31,214$$

$$b = x + z = \text{total AE} = 1,400,000$$

w =young deaths

x =young AE

y =old deaths

z =old AE

There's a rational number theorem that if you add the numerators and denominators of two fractions, the new fraction is guaranteed to be between the two.

$$\frac{w}{x} < \frac{a}{b} = \frac{w+y}{x+z} < \frac{y}{z}$$

So no matter how you partition the young and old counts, one will have to be more than the average the the other will have to be less.