Assuming lockdown rules continue into the summer and fall, there is almost no difference between the different vaccine allocation strategies (Figure 1, Table 1). Young to old results in the least cumulative infections (Table 1).

Vaccination scenarios:

1) Old to young: vaccination begins with 50-59 year olds and then progresses through 10-year age bands in decreasing order (50-59, 40-49, etc.)
2) Young to old: vaccination begins in 18-19 year olds and then progress through 10-year age bands in increasing order (18-19, 20-29, 30-39, etc.)
3) Alternative: vaccination begins in 18-30 years olds followed by 50-59 year olds and then progresses to 40-49 year olds and then 30-39 year olds.
4) No vaccination: there is no vaccination at all

Assumptions:

a) Effective reproduction number (Reff) is 1.22
b) AstraZeneca vaccination in healthy individuals starts on 7 June 2021
c) 800,000 vaccine doses per week, which are allocated across the 7 days within the week
d) Only first doses are allocated because the timing for the second dose (12 weeks after the first dose) false outside the time window of this simulation
e) Vaccination with Pfizer vaccine occurs prior to AstraZeneca vaccination in healthcare workers and the very elderly according to the vaccine distribution schedule
f) The lockdown (April 2020) contact matrix is assumed for the entire period of the simulation

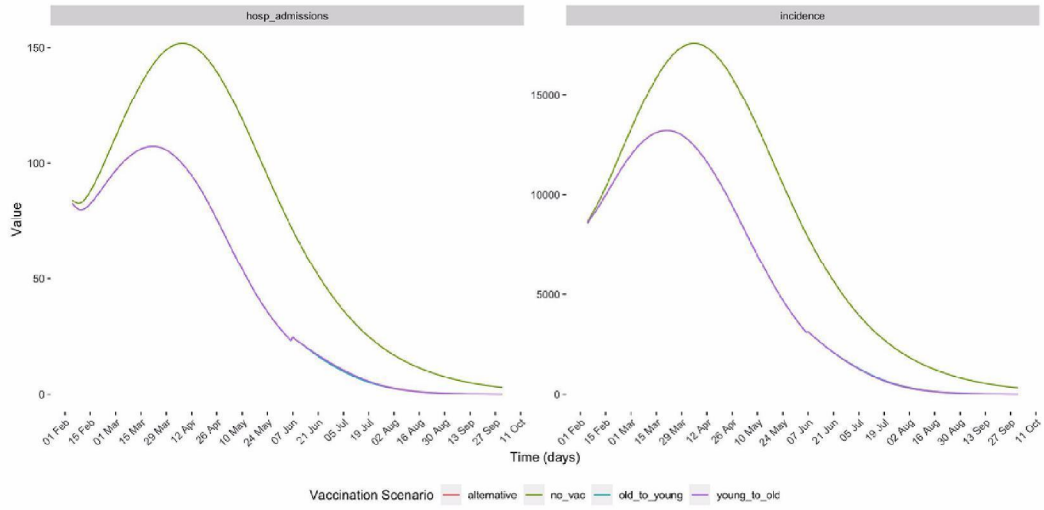

Figure 1. Hospital admissions and incidence of infections under different AstraZeneca vaccine allocation scenarios: 1) old to young, 2) young to old, 3) alternative, 4) no vaccination.

Table 1. Cumulative incidence and cumulative hospital incidence under different vaccine allocation scenarios.

Vaccine Allocation Scenario	Cumulative Incidence	Cumulative Hospital Admissions
Old to young	1292435	10486
Young to old	1290916	10507
Alternative	1292536	10510
No Vaccination	1998206	17532