







#### **Transmission**





CEPI





# Contribution to transmission











asymptomatic



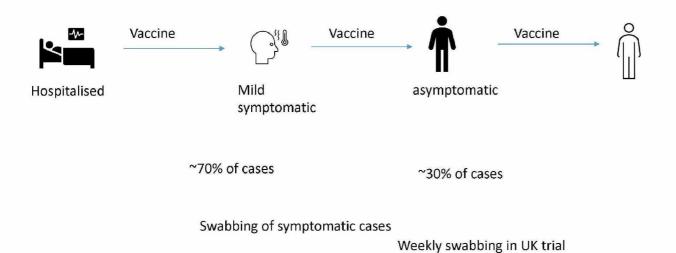
~70% of cases

~30% of cases



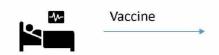
### Contribution to transmission











~100% in RCTs 80-94% in real world effectiveness studies >70 years of age

Hospitalised

Study	Design	VE Ox-AZ		
U Oxford	18 year+ RCT	~100%		
U Edinburgh	TNCC >80 years	94% (73 to 99)		
PHE	>70 years	80%		
Bristol	TNCC >80 years	80.4 (36.4-94.5)		



### Vaccine efficacy after first dose





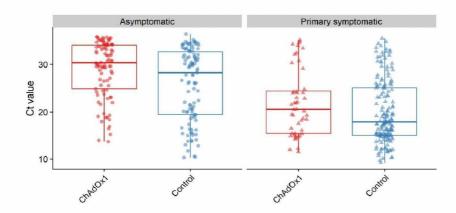
Mild symptomatic

Symptomatic COVID-19 Cases > 21 days after a single SD dose	Vaccine Efficacy (95% CI)		
Time since first standard dose			
22 to 90 days (>18 yeasr)	76% (59%, 86%)		



## Reduced viral load in those who are PCR positive despite vaccination

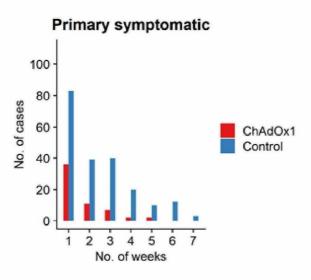






## Reduced duration of shedding in those who are PCR positive despite vaccination

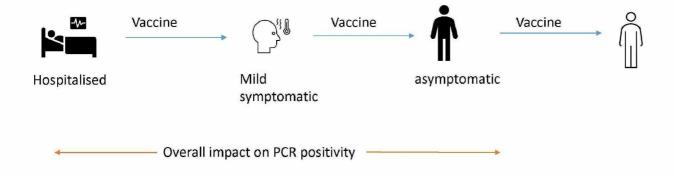






# Impact on transmission must take account of all components and can only be assessed with regular swabbing to capture asymptomatic cases



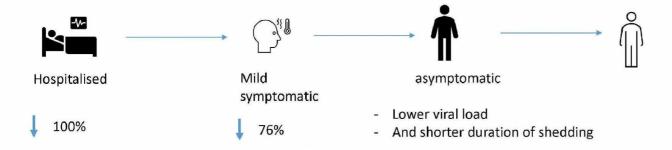




## Surrogate for reduction in transmission after first dose



Asymptomatic COVID-19 infections > 21 days after a single SD dose	N cases	ChAdOx1 nCoV-19	Control	Vaccine Efficacy (95% CI)
Time since first dose				
22 to 90 days	121	32/9257 (0.3%)	89/9237 (1.0%)	63.9% (46.0%, 75.9%)





#### **Transmission**



- Likely substantial impact from all authorised vaccines against transmission if widespread immunisation adopted
- Variants = mutations that allow ongoing transmission
- Variants Not expected to have significant escape from binding antibody or t cell responses
- Variants Evidence so far that vaccines will continue to protect against severe disease



#### **Post-infection**



In immune populations, variants will evade immunity in the upper respiratory tract to allow ongoing transmission

