

## Solutions

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### 2.1

- Droplets exceed 5  $\mu\text{m}$  and fall within  $\sim 1\text{--}2$  m of the source – the mask breaks the chain at that range ✓.

### 2.2

- Measles (and tuberculosis) – airborne; influenza is primarily droplet ✓.

### 2.3

- Spores ✓.

### 3.1

- Susceptible fraction:  $1 - 0.40 = 60\%$   $\rightarrow 1 - 0.90 = 10\%$ ;  $60/10 = 6\text{-fold}$  ✓.
- Each vaccinated worker also stops patient $\rightarrow$ worker $\rightarrow$ patient chains – blocked links multiply ✓.
- Vaccination breaks the SUSCEPTIBLE-HOST link ✓.

### 3.2

- Days 5–7 post-operation date the breach to the theatre or the first 48 h of aftercare ✓.
- Reservoir (ill staff/environment)  $\rightarrow$  route (hands, instruments)  $\rightarrow$  entry (the wound) ✓.
- Interventions: screen/isolate carriers (reservoir), theatre hygiene and instrument sterilisation (route), wound care protocols (entry) ✓.