Covid ABM Model Specs

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1 setup.setup

Setup the simulation.

2 main.go

The main simulation loop.

2.1 scale.CheckScale_cont

Scale up or down individual simulants to accommodate the current caseload.

2.2 stages.setupstages

Set policy parameters (such as mask wearing, person-avoidance) based on current stage.

2.3 policy.update_vacRestrictionEasing

Update whether vaccinated simulants have eased restrictions.

2.4 policy.CovidPolicyTriggers

Set current stage based on fixed model parameters, or recent reported cases.

2.5 incursion.incursion_update

Randomly add incursions. These are simulants that override an existing susceptible with an infection and vaccination status. The simulant reverts at the end of the infection.

2.6 simul.simul_updateIsolationResponse

Update whether or not the simulant stays at home this day.

2.7 simul.simul_move

Randomly either teleport home or move to a nearby location.

2.8 simul.simul_visitDestination

Possibly teleport to a random gather location within visiting radius.

2.9 simul.simul_update_patch_utilisation

Record when a patch last had a simulant on it.

2.10 simul.simul_avoid

Simulants potentially move to a nearby empty patch if they are in the same position as someone they are trying to avoid.

2.11 simul.simul_superSpread

Possibly teleport to a random gather location.

2.12 simul.simul_updatepersonalvirulence

Update the infectivity of the simulant.

2.13 simul.simul_checkMask

Update infectivity and transmission resistance based on mask wearing.

2.14 simul.simul_record_patch_infectiveness

Record my infectiousness on the diseased simulants on the patch.

2.15 simul.simul_infect

Susceptible simulants get infected from the recorded infectiousness of their patch.

2.16 simul.simul_updateHouseTrackedCase

Update last time each household had a tracked case.

2.17 simul.simul_isolateAndTrackFromHouseHold

Potentially set isolation state based on household tracking.

2.18 scale_shared.ShiftRecoveredTowardsTotalProportion

Recovered people slowly become susceptible, moving the proportion of recovered people in the simulation towards the proportion of recovered people in the population. This treats the agents as a 'window' into the entire population, and the shift assumes that people in the population filter in and out of this window. All infection happens in the window, so it is unrealistic to, indefinitely, have a higher proportion of recovered people in proximity to the infected people.

This gets around the fact that scaling does not affect recovered people.

2.19 trace.trace_doTrace

Recursive contract tracing system for simulants.

2.20 simul.simul_settime

Update case reporting and recovery immunity waning.

2.21 simul.simul_end_infection

End infections and collect resulting stats.

2.22 vaccine.vaccine_update

Vaccinate people as appropriate for stages.

2.23 simul.simul_updateVaccineAndRecover

Update immunity and vaccine waning.

2.24 policy.updateComplacency

Reduce avoidance behaviour due to complacency.

2.25 Various end of step cleanups and calculation

2.26 trace.traceadjust

Modify track chance based on tracked cases.