Description of input parameters:

config.properties have to contain value of input parameters, which are essential to run the model. Example for Shigellosis - *config.properties.Shigella*

N_INCUB_LIMIT - integer value - Maximal incubation period of pathogen (days); for Shigella spp. it was estimated as 4 day (Dekker and Frank, 2015).

C_INFECTED_COEF - value from 0 to 1 - Pathogen infection potential; was calculated based on infection rates compared to population size.

C_PATHOGEN_RESIST_CHANGE_COEF - value from 0 to 1 - Pathogen susceptibility to receive antibiotic resistance; Shigella spp. susceptibility to receive resistance to trimethoprim-sulfamethoxazole antibiotic was determined as 0.61 (Sack et al., 2001).

P_INCUB_TO_HOSPITAL - value from 0 to 1 - Probability of being hospitalized during incubation period; it was assessed as 0.07 (Asseray et al., 2013)

P_WRONG_TREATMENT - value from 0 to 1 - Probability of incorrect antibiotic treatment; the assessment (value 0.25) is based on public opinion polls.

P_BE_INFECTED_IN_HOSPITAL - value from 0 to 1 - Probability of being infected by pathogen during hospitalization without current infection; in view of sanitary rules and the potential to be infected this parameter is equal to 0.06 (D'Agata et al., 2007).

C_GROWTH_COEF - value from 0 to 1 - Growth rate of antibiotic resistance; an increase in microbiota resistance to the sulfonamide antibiotic group was estimated as 0.04 based on the article by Wu et. al. (2016).

C_DECREASE_COEF - value from 0 to 1 - Decrease rate of antibiotic resistance; a value of 0.025 was based on the article by Wu et. al. (2016) too.

P_HEALTHY_HOSPITALIZE - value from 0 to 1 - Probability of being hospitalized without current infection.

PERM_RESIST_LEVEL - value from 0 to 1 - Persistent level of gut antibiotic resistance; it was estimated, proceeding from data of ResistoMap (Yarygin et al., 2017) as 3.205*e-08.

N_PEOPLE_IN_TOWN - integer value - Agent count in all states; value for this one was hypothesis.

N_HOSP_ANT_TR_PERSON - integer value - Agent count in State5 (Infected person in hospital); it was hypothesis too.