Coverage generation tool – input structure and rationales

The coverage generation tool aims to generate coverage scenarios for VIMC. This will document any core coverage assumptions for future coverage projection trajectory. For historical coverage assumptions, we still need to query from data sources, mainly WHO/UNICEF and GAVI operational forecast. This tool will also serve to generate various analysis oriented coverage scenarios.

For each country and disease combination, this tool generate coverage scenarios according to an input set-up of 12 entries. An example input set-up as below:

input <- list(

[1] user = "vimc", # or external

[2] country = "PAK",

[3] disease = "Measles",

[4] year\_cur = 2021,

[5] coverage\_src\_his = "202207wue",

[6] coverage\_src\_fut = "202303gavi",

[7] rout\_int = data.frame(vaccine = c("MCV1", "MCV2"),

year\_intro = c(NA, NA)),

[8] rout\_his = NULL,

[9] sia\_his = NULL,

[10] rout\_fut = NULL,

[11] sia\_fut = NULL,

[12] proj\_rul = list(

rule1 = list(

catch\_up\_with\_x = list(year\_from = 2027, year\_to = 2030, vaccine\_x\_level = 0.9),

non\_linear\_scale\_up = list(year\_from = 2031, year\_to = 2035, endpoint = 0.95),

keep\_levels = list(year\_from = 2036, year\_to=2040, level=0.95)),

rule2 = list(

non\_linear\_scale\_up = list(year\_from = 2031, year\_to = 2035, endpoint = 0.95),

incremental = list(year\_from = 2024, year\_to = 2026, step = 0.01, cap = 0.95),

keep\_levels = list(year\_from = 2036, year\_to=2040, level=0.95))

)

## campaign projection can be difficult, still thinking

)

## VIMC user

For VIMC user, i.e. the science team, we use this tool mostly for WUENIC, OP and model run coverage scenario generation. To illustrate how this tool is used, I am dividing into three themes.

### WUENIC

Historical from new WUENIC release, future from latest OP for gavi countries, and use projection rules for non-gavi countries.

### OP

Historical from latest WUENIC, future from new OP release for gavi countries, and use projection rules for non-gavi countries.

### model run

Historical from latest WUENIC, and use projection rules for all countries.

## External user