

RESPI-RADAR

A BELGIAN TOOL TO MONITOR RESPIRATORY INFECTIONS

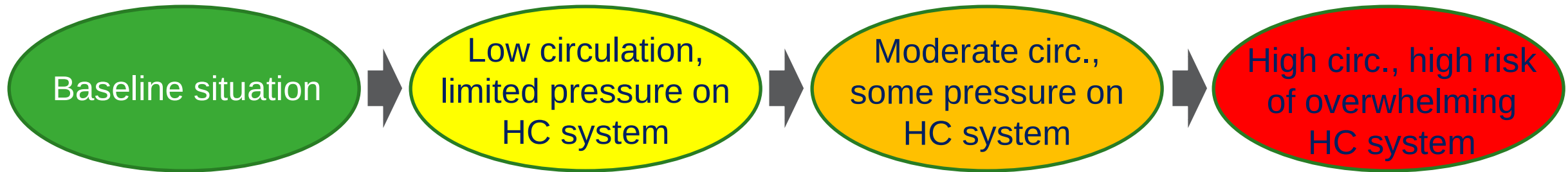
EU/EEA respiratory virus network meeting

June 13th, 2024

Laurane De Mot

Respi-radar

- Management tool to **assess** the severity of the epidemiological situation of respiratory infections & **inform** public health preparedness and response to help decision making
- **4 risk levels** based on indicators reflecting viral circulation and pressure on health care



- The **Risk Assessment Group (RAG)**, coordinated by Sciensano and composed of PH authorities and experts, proposes a risk level based on indicators (and provides recommendations for measures)

Indicators

Sentinel GPs
(ILI-GP)

- **GP consultations for ILI** symptoms
- **GP consultations for other ARI**

Sentinel
hospitals (SARI)

- **Hospitalizations for SARI**
- **Hospitalizations for SARI with severe complications** (ICU, ARDS, invasive ventilation, ECMO, death)

Sentinel nursing
homes (ILI-NH)

- **ILI in nursing homes**

Wastewater
Sars-Cov-2

- **SARS-CoV-2 concentrations** (number of treatment plants positive for the indicator “high circulation”)

Weekly
incidences

Thresholds

- ILI: provided by ECDC
- Other thresholds provided by each team based on their expertise and knowledge of their own data
 - e.g., ARI/SARI: based on MEM, 5y pre-pandemics data

Level	GP consultation for ILI*	GP consultation for ARI*	ILI in nursing homes**	Hospitalizations for SARI*	Severity SARI\$	Wastewater\$\$
Green	< 128	< 1208	< 7	< 4,4	< 0,68	< 5
Yellow	128-507	1208-1293	7-13	4,4-9,8	0,68 - 1,4	5 – 10 stations +
Orange	508-783	1294-1984	14-20	9,9-33,7	1,41 - 3,03	11-15 stations +
Red	>783	>1984	>20	>33,7	> 3,03	> 15 stations +

Overview Respi-Radar Sept 2023 – March 2024

Week	Consultations GPs for ILI symptoms*	Consultations GPs for ARI*	ILI in nursing homes**	Hospital admissions for SARI*	Complications after hospital admission for SARI***	Concentration SARS-CoV-2 in waste water****	Evaluation RAG
2023w34	90	462	6	1,9	0	5	green
2023w35	79	516	7	2,8	0	10	green
2023w36	104	654	9	0,93	0	14	green
2023w37	113	641	4	1	0	7	green
2023w38	101	703	6	1,7	0	9	green
2023w39	119	1007	6	6,6	0	14	green
2023w40	128	926	8	2,8	0	10	green
2023w41	132	920	4	2,1	0	15	green
2023w42	155	1036	6	1,5	0	11	green
2023w43	44	845	3	2,9	0	8	green
2023w44	88	798	7	7	0	9	green
2023w45	156	1275	6	11	0	10	green
2023w46	157	990	15	5,2	0	14	yellow
2023w47	167	989	9	6,8	0	19	yellow
2023w48	220	1223	11	7,1	0	20	yellow
2023w49	250	1363	19	9,1	0,1	24	yellow
2023w50	275	1271	5	9,4	0,1	22	yellow
2023w51	359	1220	8	8,7	0	27	yellow
2023w52	231	1152	5	13,6	0,3	19	yellow
2024w01	234	965	11	12,9	0,6	10	yellow
2024w02	283	1140	11	10	0,2	11	yellow
2024w03	315	1057	13	10,7	0,1	13	yellow
2024w04	537	1363	12	7,9	0,1	11	orange
2024w05	532	1406	12	14,6	0,2	9	orange
2024w06	523	1176	17	15,2	0,5	3	orange
2024w07	267	1070	7	11,3	0,5	4	orange
2024w08	230	1093	7	13,3	0,5	6	yellow
2024w09	194	925	3	10,1	0,2	4	yellow
2024w10	128	890	7	9	0,2	1	yellow
2024w11	151	871	7	9,4	0,4	2	green
2024w12	62	789	4	9,7	0,1	0	green
2024w13	85	909	2	6,7	0	0	green
2024w14	74	743	5	9,2	0,2	0	green
2024w15	56	681	4	8,7	0,6	0	green
2024w16	41	679	3	8,1	0,2	0	green
2024w17	53	754	1	6,9	0,1	0	green

Additional indicators feeding the assessment

- Vaccination
- Mortality
- Qualitative feedback from experts (eg workload)
- Modeling (prediction)
- International and European situation
- Pathogen-specific data, e.g. genomic surveillance SARS-CoV-2

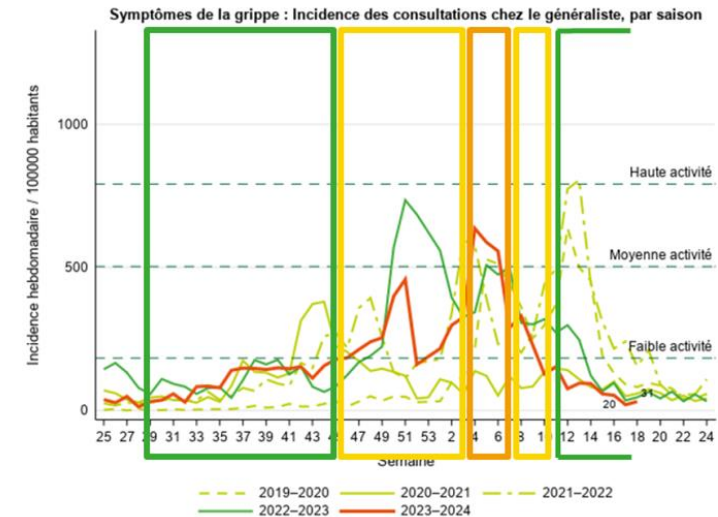
Data available at time of assessment

Fit risk level and consolidated data

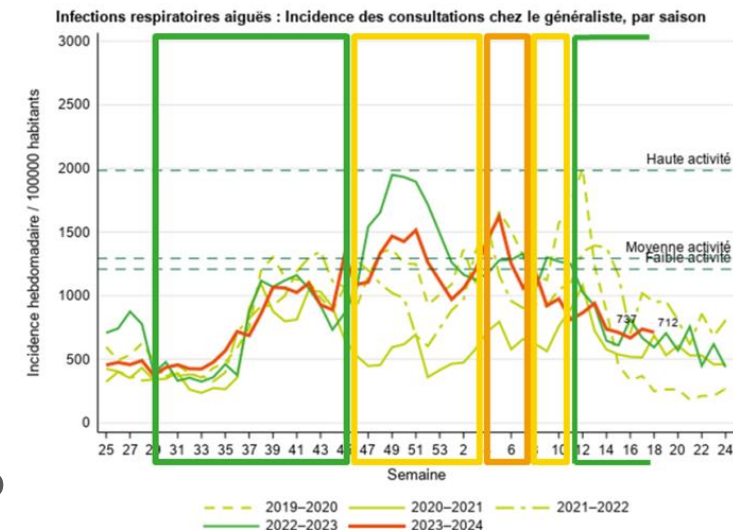
Respiratory season 2023-2024

- RSV: peak week 45 (Nov 2023) → Respi-Radar yellow
- SARS-CoV-2: peak week 51 (Dec 2023) → Respi-Radar yellow
- Influenza : peak week 5 (Feb 2024) → Respi-Radar orange (flu epidemic medium intensity but relatively long – 11 weeks)

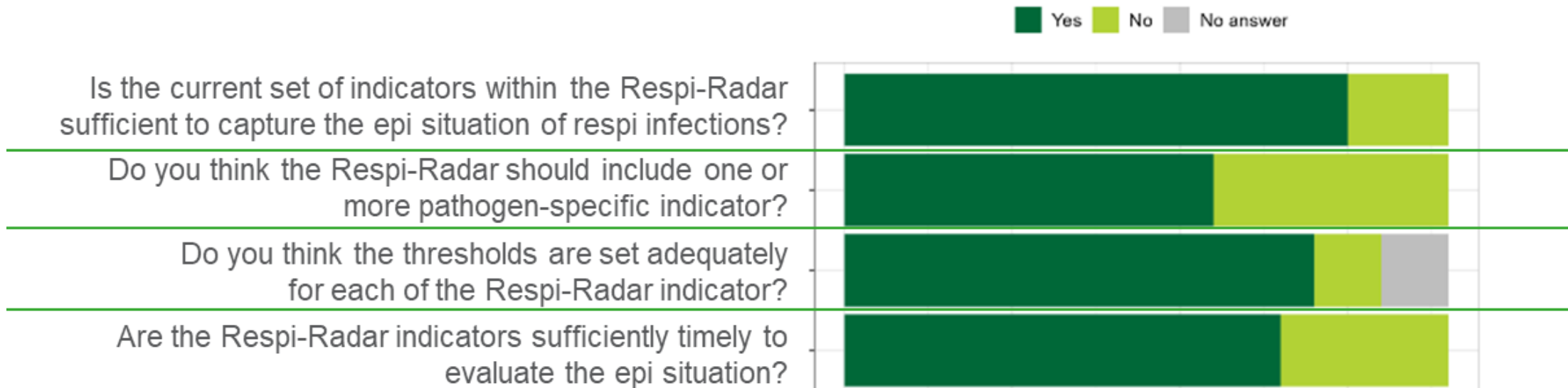
ILI-GP



ARI-GP

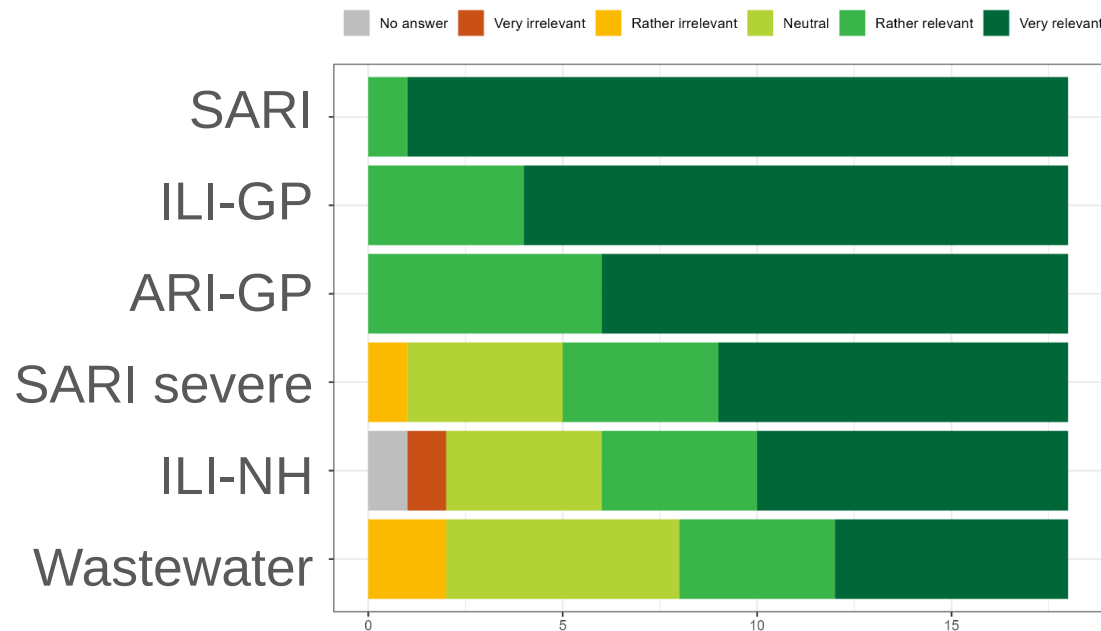


Feedback from RAG experts: general



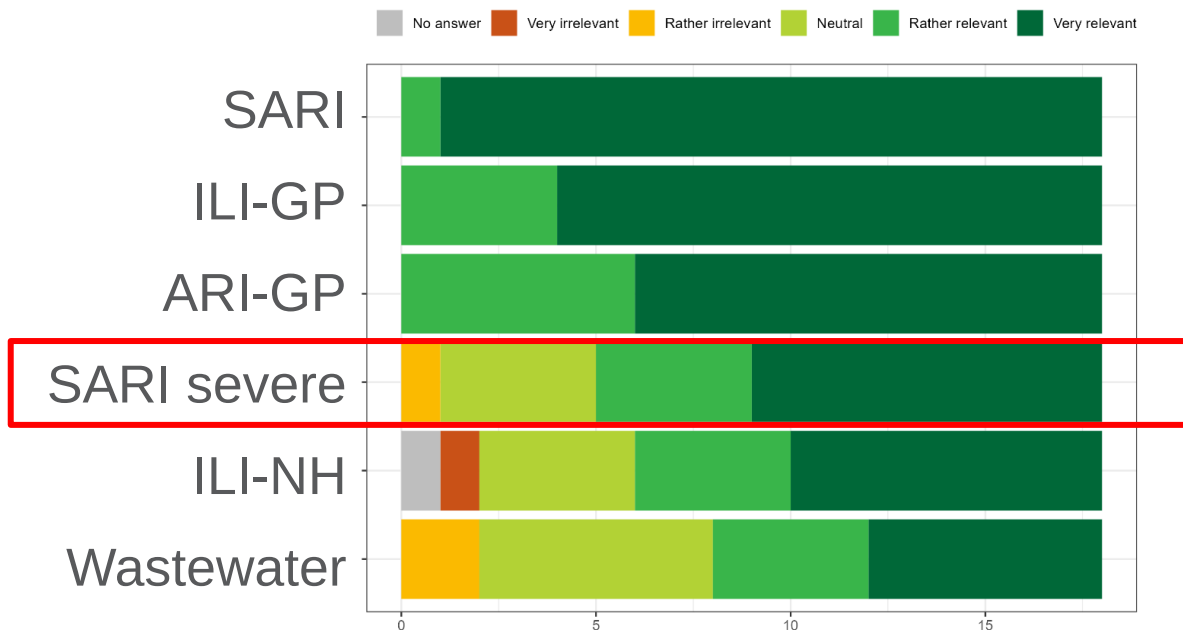
Feedback from RAG experts – per indicator/context

Relevance for assessment of epidemiological situation

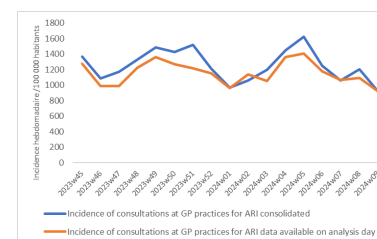
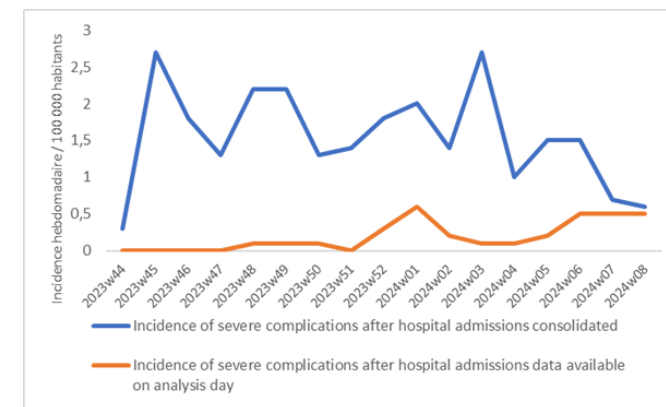


Feedback from RAG experts – per indicator/context

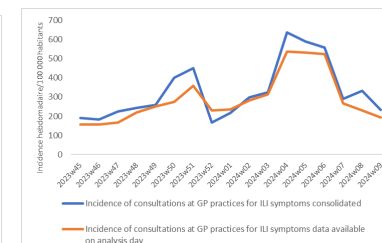
Relevance for assessment
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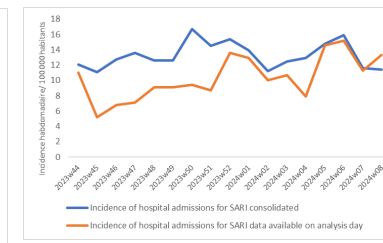
SARI severe indicator, in the current
format, is not usable as real-time
indicator (delay)



ILI-GP



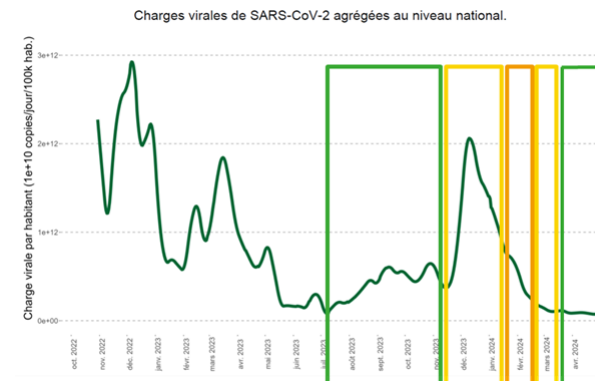
ARI-GP



SARI .be

Conclusions

- The Respi-Radar is a useful tool to **monitor the epidemiological situation** of respiratory infections, **very helpful for communication**
- The indicators used so far are relevant and appropriately reflect the real situation, despite some caveats
 - SARI severe: delay → change data collection?
 - ILI-NH representativeness (low participation & geographical representativeness)
 - Wastewater (only Sars-Cov2) → to be extended to RSV and influenza



Acknowledgements



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Sven Hanoteaux

RAG preparation and coordination

Géraldine De Muylder
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Simon Couvreur

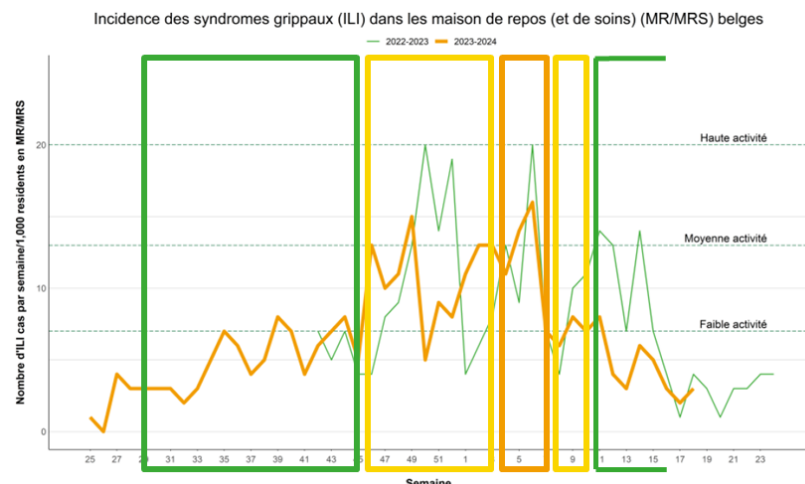
Surveillance teams

Nathalie Bossuyt
Robrecht De Schreye
Sherihane Bensemmane
Sarah Moreels
Floriane Rouvez
Milena Callies
Louise Vaes
Veronik Hutse
Raphael Janssens



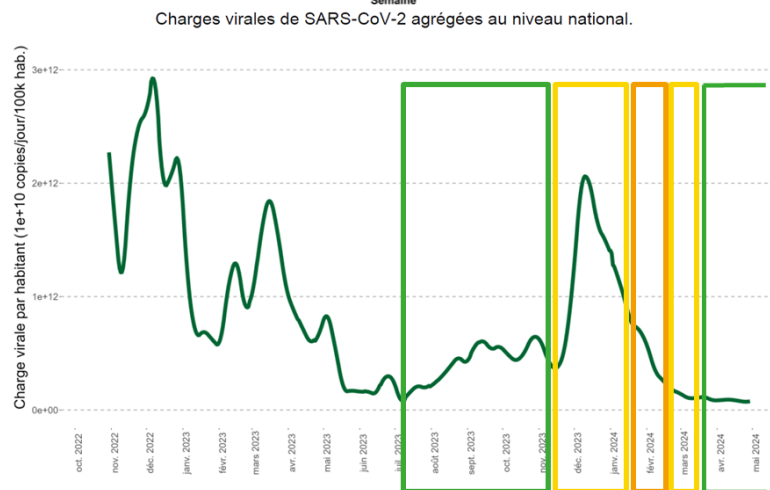
SUPPLEMENTARY SLIDES

Fit risk level and consolidated data

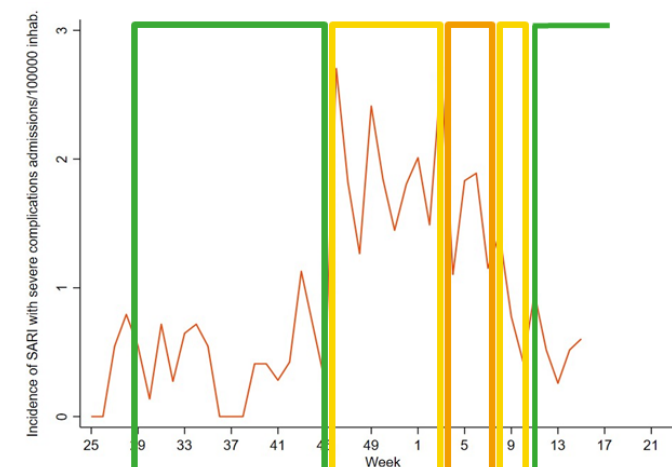
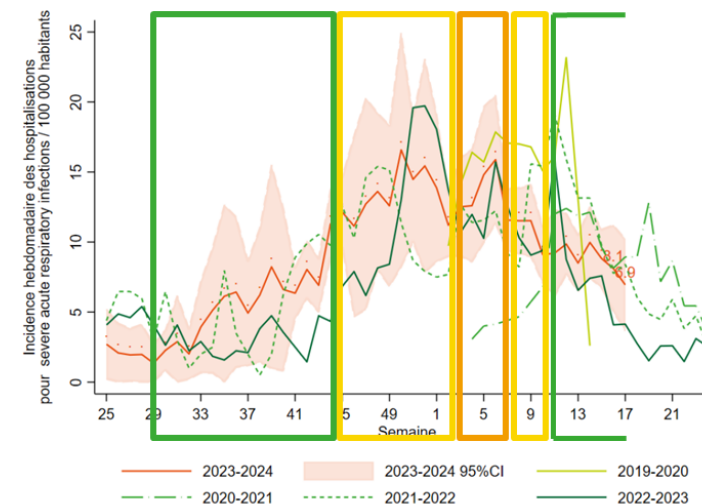


ILI-NH

- ILI-NH: less representative (low participation, low geographical spread)
- WW: Sars-Cov2 only
- SARI severe: delay



SARI



Overview Respi-Radar Sept 2023 – March 2024

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2024w16	41	679	3	8,1	0,2	0	green
2024w17	53	754	1	6,9	0,1	0	green

Measures

Sept 2023: communication guidelines

Oct 2023: maintain basic protective measures; importance vaccination

Nov 2023: ref to advice SSC for recommendations to the general population. Recommendations to healthcare sector from RMG

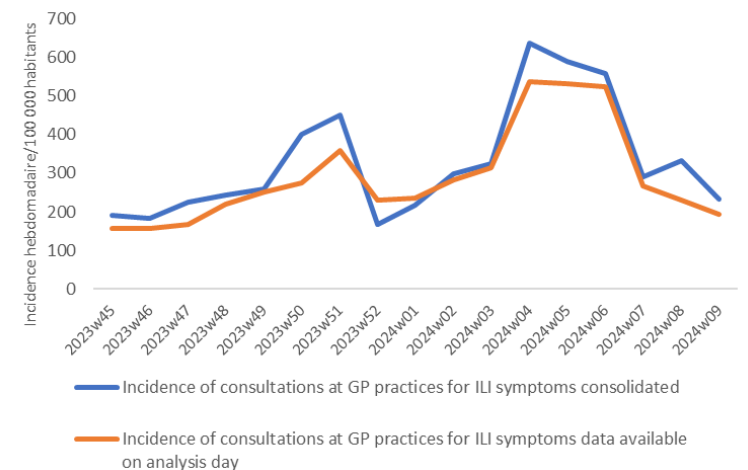
Jan 2024: no additional measures but increased communication

Data available at time of assessment

Consolidated data

Week	Consultations GPs for ILI symptoms*	Consultations GPs for ARI*	ILI in nursing homes**	Hospital admissions for SARI*	Complications after hospitalisation for SARI***	Concentration SARS-CoV-2 in wastewater****	Evaluation RAG	Measures
2023w29	31	373	3	1,3	0,5	0	green	
2023w30	36	435	3	2,3	0,1	0	green	
2023w31	58	456	3	2,9	0,7	3	green	
2023w32	29	425	2	2,0	0,3	7	green	
2023w33	83	424	3	3,9	0,6	5	green	
2023w34	85	477	5	5,1	0,7	8	green	
2023w35	79	567	7	6,1	0,5	10	green	
2023w36	140	718	6	6,4	0,0	14	green	
2023w37	148	686	4	4,9	0,0	7	green	
2023w38	147	859	5	6,2	0,0	9	green	→ Sept 2023: communication guidelines
2023w39	143	1066	8	8,2	0,4	14	green	
2023w40	149	1061	7	6,6	0,4	10	green	
2023w41	146	1025	4	6,7	0,3	15	green	→ Oct 2023: maintain basic protective measures; importance vaccination
2023w42	153	1098	6	8,5	0,4	11	green	
2023w43	113	928	7	7,3	1,2	8	green	
2023w44	156	889	8	11,3	0,7	9	green	
2023w45	179	1314	5	12,1	0,3	10	green	
2023w46	184	1087	13	11,1	2,7	14	yellow	→ Nov 2023: ref to advice SSC for recommendations to the general population. Recommendations to healthcare sector from RMG
2023w47	213	1107	10	12,7	1,8	19	yellow	
2023w48	240	1332	11	13,6	1,3	20	yellow	
2023w49	254	1468	15	12,6	2,3	24	yellow	
2023w50	399	1426	5	16,7	1,4	22	yellow	
2023w51	458	1515	9	14,5	1,4	27	yellow	
2023w52	161	1262	8	15,4	1,8	19	yellow	
2024w01	216	971	11	13,9	2,0	11	yellow	
2024w02	298	1059	13	11,2	1,5	11	yellow	
2024w03	325	1200	13	12,5	2,7	13	yellow	
2024w04	636	1444	11	12,7	1,1	11	orange	→ Jan 2024: no additional measures but increased communication
2024w05	588	1623	12	14,8	1,8	9	orange	
2024w06	557	1252	16	15,9	1,9	3	orange	
2024w07	289	1061	7	11,6	1,2	4	orange	
2024w08	330	1190	6	11,5	1,2	6	yellow	
2024w09	228	921	8	11,5	0,6	4	yellow	
2024w10	127	975	7	9,1	0,4	1	yellow	
2024w11	153	813	7	9,2	0,8	2	green	
2024w12	76	865	4	9,9	0,3	0	green	
2024w13	81	901	2	6,7	0,0	0	green	

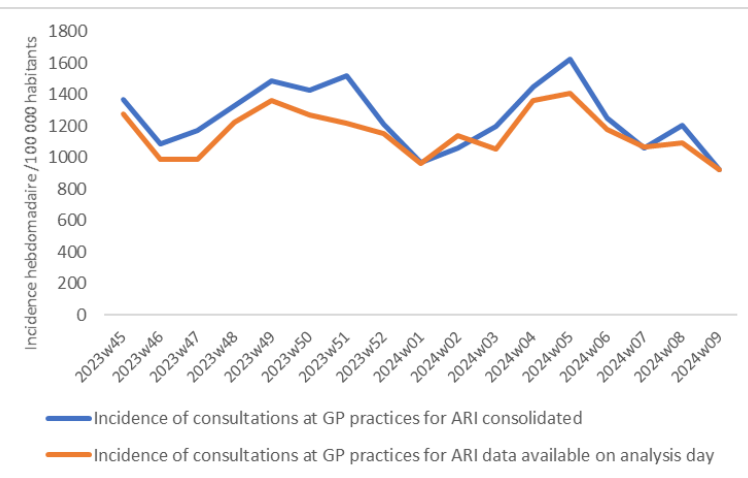
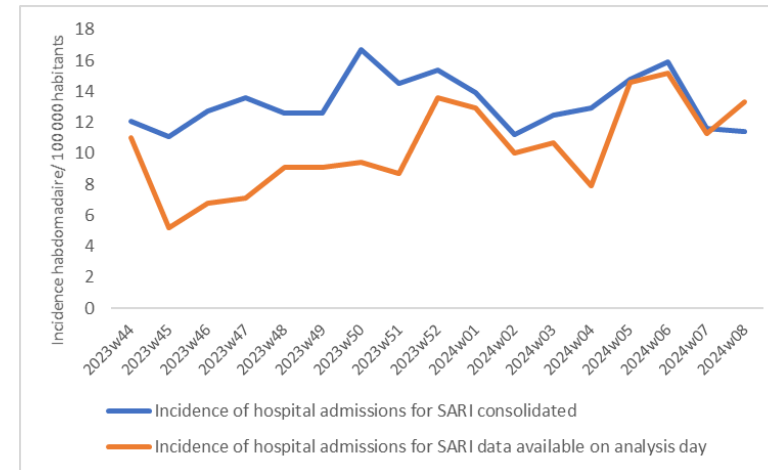
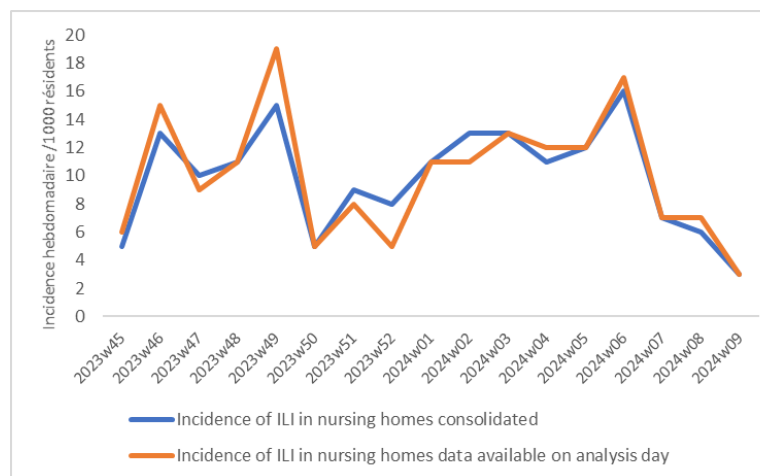
Completeness of respi-radar indicators



ILI-GP

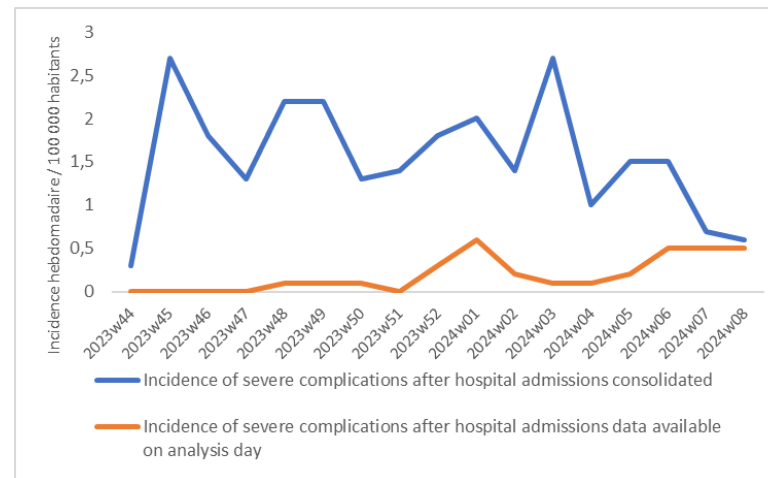
ILI-NH

SARI



— consolidated data

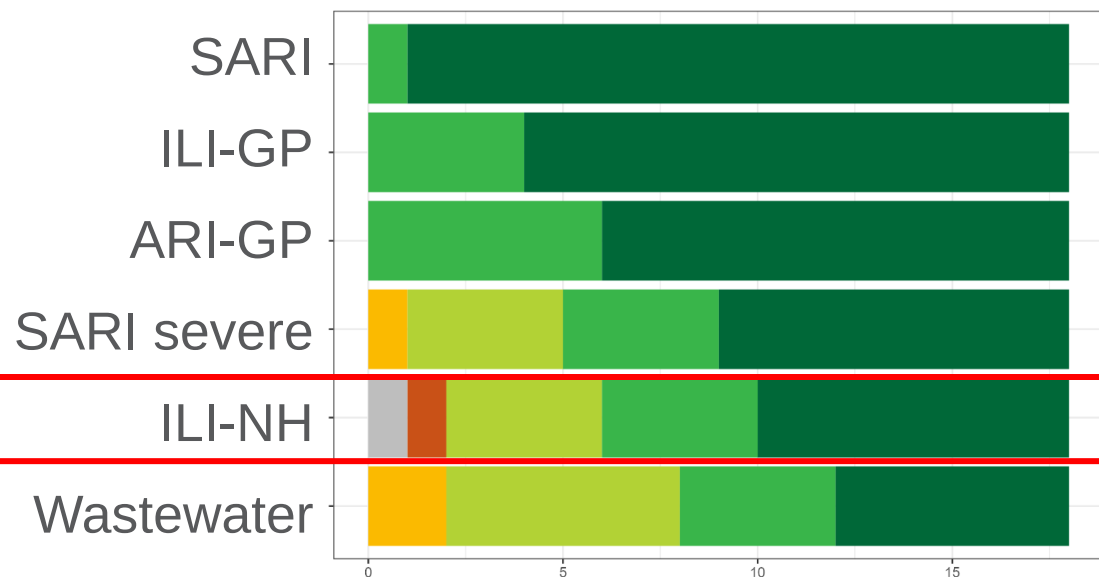
— data available on the day of the assessment



Feedback from RAG experts – per indicator/context

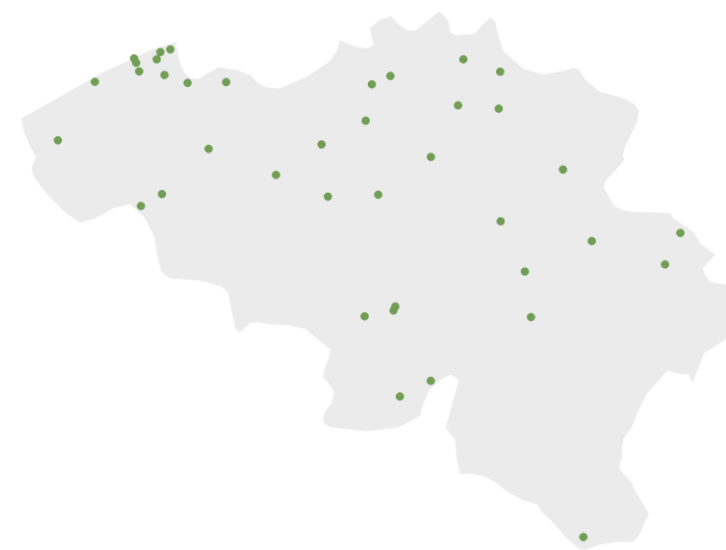
Relevance for assessment
of epidemiological situation

■ No answer ■ Very irrelevant ■ Rather irrelevant ■ Neutral ■ Rather relevant ■ Very relevant



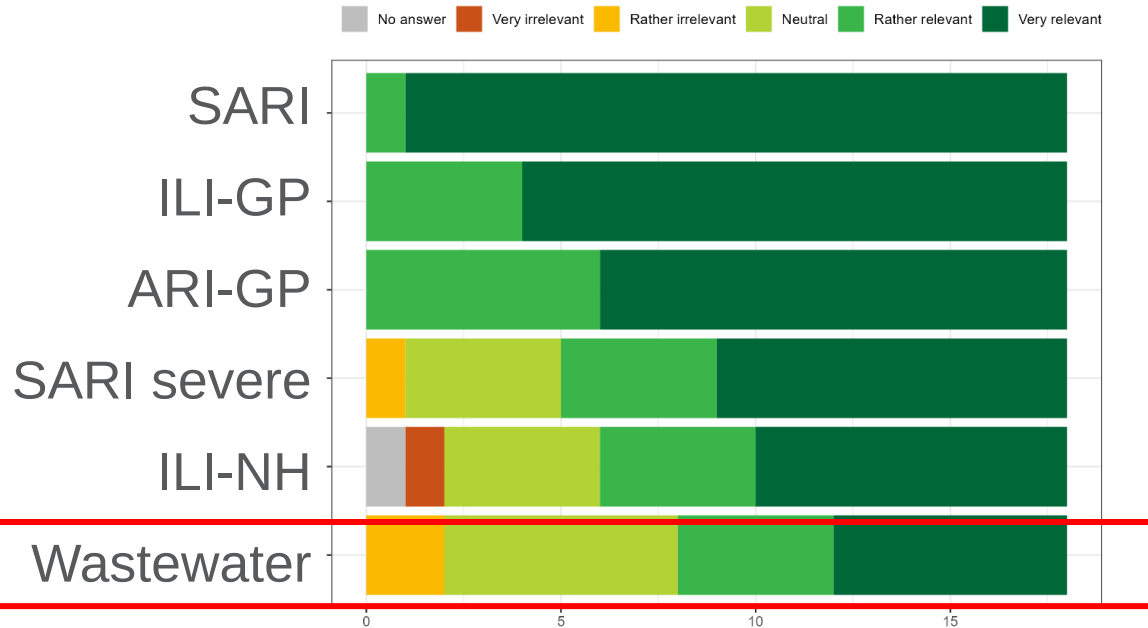
n = 17

The NH sentinel network is
not representative enough
of the country
(geographically)



Feedback from RAG experts – per indicator/context

Relevance for assessment
of epidemiological situation



The wastewater surveillance was only focused on Sars-Cov-2 and missed the orange phase (influenza peak)

