

GENERAL CHARACTERISTICS OF THE SENTINEL GENERAL PRACTITIONERS (SGP) NETWORK IN BELGIUM: SHORT REPORT ON 2019- 2022

S. MOREELS • S. BENSEMMANE • N. BOSSUYT • M. VERMEULEN • S. FIERENS • F.
ROUVEZ • R. DE SCHREYE

WHO WE ARE

Sciensano can count on more than 950 staff members who are committed to health every day.

As our name suggests, science and health are central to our mission. Sciensano's strength and uniqueness lie within the holistic and multidisciplinary approach to health. More particularly we focus on the close and indissoluble interconnection between human and animal health and their environment (the "One health" concept). By combining different research perspectives within this framework, Sciensano contributes in a unique way to everybody's health.

For this, Sciensano builds on the more than 100 years of scientific expertise.

Sciensano

Epidemiology and public health - Health services research

October 2023 • Brussels • Belgium
Internal reference number: D/2023.14.440/71

—

S. Moreels¹

•

S. Bensemmane¹

•

N. Bossuyt²

•

M. Vermeulen²

•

S. Fierens²

•

F. Rouvez¹

•

R. De Schreye¹

•

In collaboration with
all participating sentinel general practitioners of 2019-2022

1 Sciensano, Epidemiology and Public Health, Health Services Research, Brussels
2 Sciensano, Epidemiology and Public Health, Epidemiology of Infectious Diseases, Brussels

Contactperson: Sarah Moreels • T+32 2 642 50 36 • sarah.moreels@sciensano.be

With the financial support of



Services du Collège réuni de la Commission communautaire commune
Diensten van het Verenigd College van de Gemeenschappelijke Gemeenschapscommissie

Partners



Please cite as: S. Moreels, S. Bensemmane, N. Bossuyt, M. Vermeulen, S. Fierens, F. Rouvez, R. De Schreye. General characteristics of the Sentinel General Practitioners (SGP) network in Belgium: short report on 2019-2022. Brussels, Belgium: Sciensano; 2023 21p. Report number: D/2023.14.440/71. Available from: October 2023.

TABLE OF CONTENTS

| | |
|---|-----------|
| THE SENTINEL GENERAL PRACTITIONERS (SGP) NETWORK IN BELGIUM..... | 7 |
| 1. Background | 7 |
| 2. General characteristics of the Sentinel General Practitioners (SGP) network in 2022 | 9 |
| 3. Internal and external validity of the SGP network during 2019-2022..... | 11 |
| 3.1. Age-gender distribution among sentinel GPs and non-sentinel GPs | 11 |
| 3.2. Population coverage | 12 |
| 3.3. Stability of the network..... | 13 |
| 4. The SGP network from 2023 onwards..... | 15 |
| 4.1. Age-gender distribution among sentinel GPs and non-sentinel GPs | 15 |
| 4.2. Population coverage | 15 |
| 4.3. Stability of the network..... | 16 |
| 4.4. Recruitment efforts during 2023..... | 16 |
| REFERENCES | 17 |
| ANNEXES | 19 |

THE SENTINEL GENERAL PRACTITIONERS (SGP) NETWORK IN BELGIUM

1. Background

Sentinel surveillance by general practitioners (GPs) is an accepted system of public health surveillance, i.e. the on-going collection, analysis, and interpretation of health data essential to public health practice, closely integrated with timely dissemination of information for intervention (1). In sentinel surveillance a sample of professionals or organizations such as general practices, hospitals, laboratories, clinicians are designated to collect and report data that are considered as representative for a specified population.

Networks of SGP were developed by GPs to use the wealth of the information they gathered in their daily practice for research, education or management. General practice is the first source of professional health information next to the general population and most health problems are exclusively managed by GPs (2;3). Almost all people in Belgium have a general practitioner and therefore they are a good source of information about the health of the population. In 1979 the Belgian network of SGP was developed drawing on experiences by the Weekly Returns Service in the UK and the Sentinel Stations in the Netherlands (4). In the early 1990s several networks of SGP were operating and co-operating in Europe (5;6).

All networks of SGP have in common that anonymous data from clinical practice on well-defined problems are recorded by voluntary, self-selected GPs covering a region/population and subsequently transferred to a central office for analysis and diffusion of study results. Networks of SGP may differ in their aim (surveillance of infectious/non-infectious health problems or oriented towards health services research), size (regional or national) and available methods for the estimation of populations at risk (patient lists or number of patient contacts per week) and data transmission (by paper forms or electronic data transmission) (5;6).

The *aims* of the Belgian SGP network have broadened over time. The network has a long history of routine surveillance by monitoring continuously the occurrence of influenza-like illness. The periodical surveillance of e.g. sexual transmitted infections (STIs) may be considered as an enhanced surveillance by its collection of additional data on top of age, gender and other core data. The surveillance of end-of-life care is definitely oriented towards health services research as the study aims to describe usual care by GPs (7;8). By providing epidemiological information as well as information on care provided in general practice, the SGPs support the policymakers in defining priorities and evaluating health policy. Since 2020, ad hoc only-once online surveys are also used to investigate health services research in primary health care (e.g. corona preparedness survey, Long Covid survey).

The **Belgian SGP network** is a nationwide network comprising about 100 general practices all over Belgium. The coverage of the network is estimated at 1.0% - 1.5% of the Belgian population. On a weekly basis, data is voluntarily reported by the sentinel GPs about 8 different health problems (infectious and non-infectious diseases). Therefore the impact and the

characteristics of different health problems in Belgium can be monitored. Some of them are monitored continuously over time (e.g. acute respiratory infections, influenza-like illness). Other are monitored recurrently (e.g. tick bites and/or suspicion of Lyme disease, advanced care planning) to gather data at regular intervals that can be compared and support the authorities in charge of health policies.

Acute respiratory infections, influenza-like illness and acute diarrhea are covered by the network continuously by weekly reporting of aggregated data (incl. zero reporting). For each episode age group, vaccination status and hospitalization are recorded. There is also a close collaboration with the National Reference Center for Influenza (NRC Influenza) in Belgium for the virological surveillance in a subset of patients. For the other health topics, case-by-case data are recorded by the sentinel GPs through specific questionnaires in order to better describe the characteristics and risk factors. These questionnaires can be consulted or filled in directly on the website of the SGP network. The registration is done through online forms (LimeSurvey) available on the website of the SGP network. Data is automatically stored on a secured server managed by Sciensano. For more info, see:

- <https://www.sciensano.be/nl/netwerk-van-huisartsenpeilpraktijken> (Dutch)
- <https://www.sciensano.be/fr/reseau-des-medecins-vigies> (French)
- <https://www.sciensano.be/en/network-general-practitioners> (English)

An overview of the health topics monitored during 2019-2022 by the SGP network is presented here.

| Health topics | Registration period | | | |
|---|---------------------|------|------|------|
| | 2019 | 2020 | 2021 | 2022 |
| Acute respiratory infections | X | X | X | X |
| Influenza-like illness | X | X | X | X |
| Acute diarrhea | X | X | X | X |
| SARS-CoV-2 test results | | X | X | X |
| Fall incidents among people >=65 years | X | X | X | |
| Problematic substance use | X | X | | |
| Sexual Transmitted Infections (STIs) | X | X | X | X |
| Tick bites and/or suspicion of Lyme disease | X | X | | X |
| Varicella | X | X | X | X |
| Zona or post herpetic neuralgia | | | X | X |
| Psychopharmaceuticals in children, adolescents and young adults | | | X | X |
| Advanced Care Planning (ACP) | | | | X |

An overview of all the publications by the SGP network published between January 2019 and December 2022 is available in Annexes.

2. General characteristics of the Sentinel General Practitioners (SGP) network in 2022

In 2022, 75 practices corresponding to 115 SGPs (=103GPs + 12 HAIOS) of our network belong to the regular (i.c. participating at least 26 weeks per year) participating sentinel GPs (SGPs) in our SGP network.

Table 1. The distribution of the regular SGPs 2022 by region, SGP network.

| REGION | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|----------|-----------|---------|----------------------|--------------------|
| Brussels | 12 | 16.00 | 12 | 16.00 |
| Flanders | 44 | 58.67 | 56 | 74.67 |
| Wallonia | 19 | 25.33 | 75 | 100.00 |

Table 2. The distribution of the regular SGPs 2022 by practice type, SGP network.

| PRACTICE_TYPE | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|----------------------------------|-----------|---------|----------------------|--------------------|
| Duo practice | 8 | 10.67 | 8 | 10.67 |
| Group practice >2 GPs | 21 | 28.00 | 29 | 38.67 |
| Multidisciplinary group practice | 11 | 14.67 | 40 | 53.33 |
| Solo practice | 35 | 46.67 | 75 | 100.00 |

Table 3. The distribution of the regular SGPs 2022 by GP sex, SGP network.

| SEX | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|--------|-----------|---------|----------------------|--------------------|
| Female | 32 | 42.67 | 32 | 42.67 |
| Male | 43 | 57.33 | 75 | 100.00 |

The median GP age of the regular SGPs 2022 is 62 (IQR: 54-68).

The following figures present the distribution of the regular participating practices (Figure 1), regular participating sentinel GPs (Figure 2) and the coverage (Figure 3) in 2022.

Figure 1. Regular participating practices in 2022, SGP network.

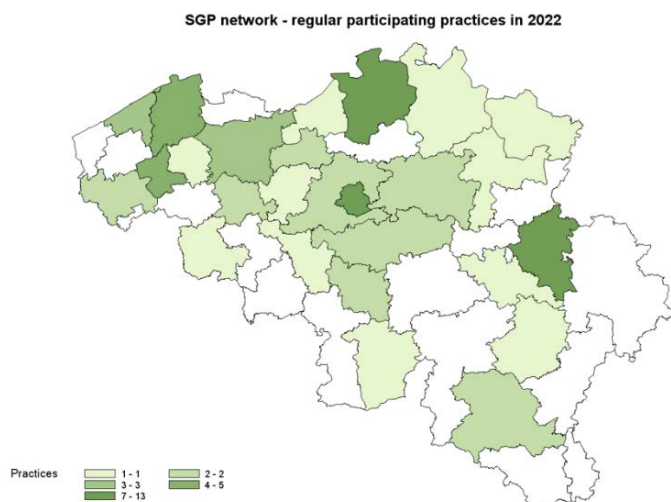


Figure 2. Regular participating sentinel GPs in 2022, SGP network.

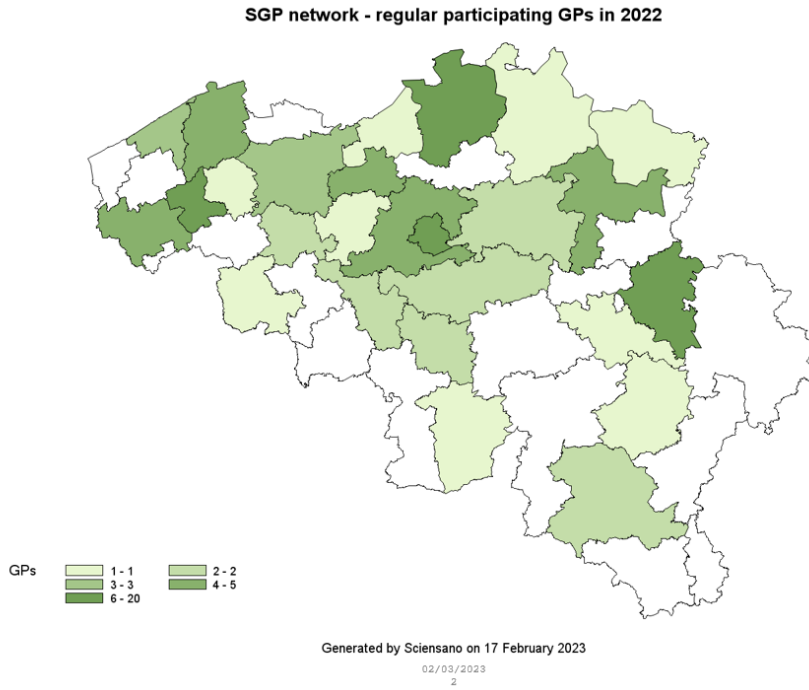
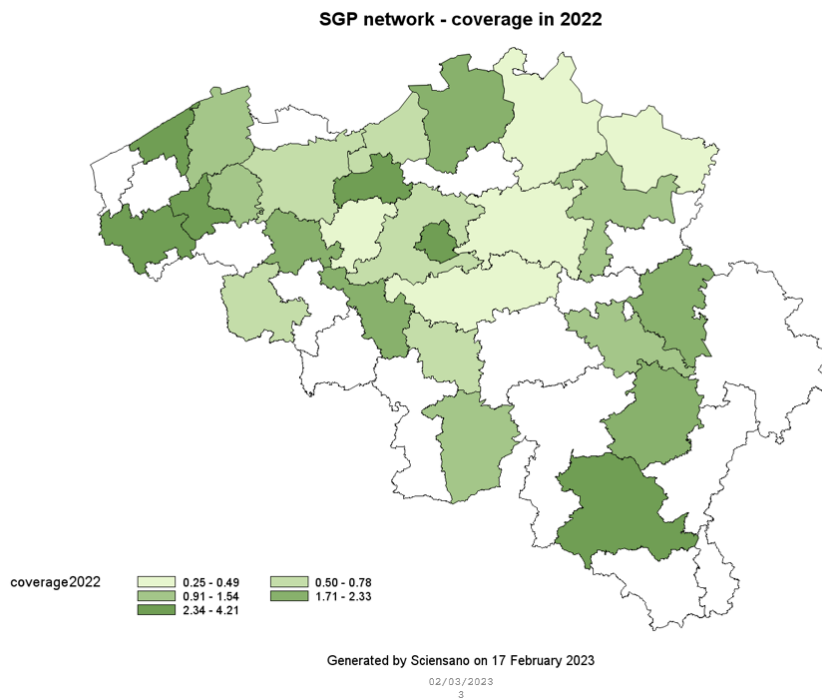


Figure 3. Coverage of the SGP network in 2022.



3. Internal and external validity of the SGP network during 2019-2022

The Belgian SGP surveillance system relies on the assumption that a sufficient number of GPs in all the districts and a similar age-gender distribution of the sentinel GPs compared to non-sentinel GPs, results in an unbiased population, i.e. similar to the actual source population in size, needs and general characteristics.

Therefore, the achievement of the following three targets related to the internal and external validity of the SGP surveillance system is monitored since the mid-eighties.

1. The age-gender distribution among sentinel GPs and non-sentinel GPs should be similar;
2. The network of SGP should cover all Belgian districts and preferably 1% of its population;
3. The network should be stable in order to achieve a continuous data quality. Therefore the annual drop-out rate of SGP should be less than 10% with reference to the previous year. This target is of minor importance because the network should also renew itself in order to represent the general practice workforce.

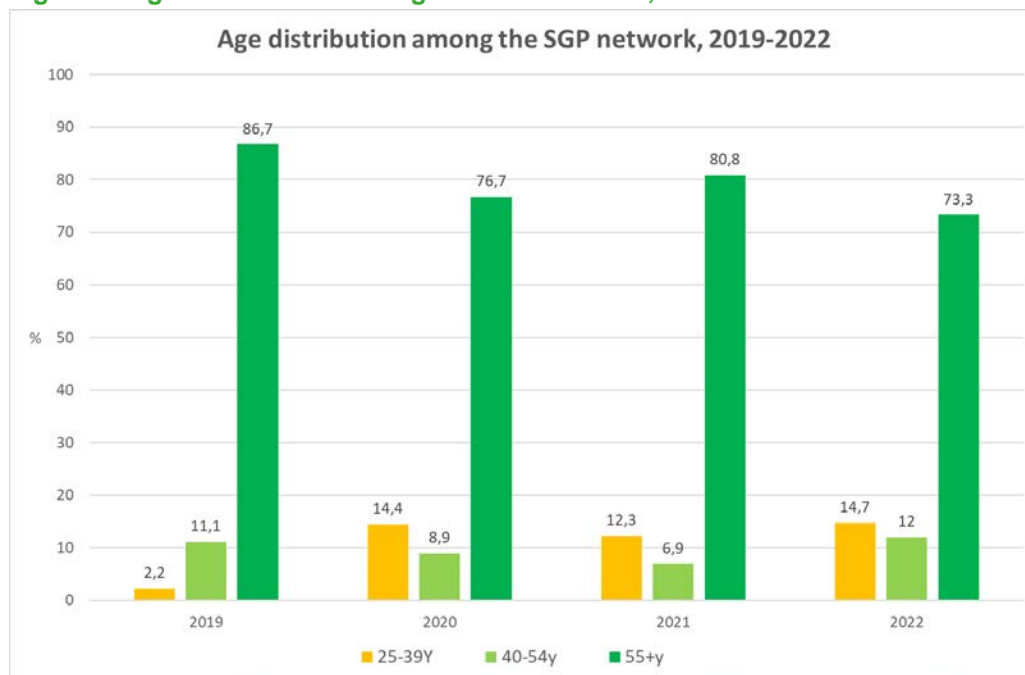
3.1. AGE-GENDER DISTRIBUTION AMONG SENTINEL GPs AND NON-SENTINEL GPs

An overview of the distribution of the SGP network during 2019-2022 by region, age and sex distribution is presented in Table 4.

Table 4. Region, age and sex distribution among the SGP network, 2019-2022.

| | 2019 | 2020 | 2021 | 2022 | p-value |
|------------------|------------|------------|------------|------------|---------|
| Region | | | | | 0.928 |
| Flanders | 52 (57.8%) | 54 (60.0%) | 44 (60.3%) | 44 (58.7%) | |
| Wallonia | 28 (31.1%) | 27 (30.0%) | 21 (28.7%) | 19 (25.3%) | |
| Brussels | 10 (11.1%) | 9 (10.0%) | 8 (11.0%) | 12 (16.0%) | |
| Sex of SGPs | | | | | 0.928 |
| Female | 37 (41.1%) | 39 (43.3%) | 28 (38.4%) | 32 (42.7%) | |
| Male | 53 (58.9%) | 51 (56.7%) | 45 (61.6%) | 43 (57.3%) | |
| Age of SGPs | | | | | 0.555 |
| less30years | 0 (0.0%) | 1 (1.1%) | 1 (1.4%) | 2 (2.7%) | |
| 30-39y | 2 (2.2%) | 12 (13.3%) | 8 (11.0%) | 9 (12.0%) | |
| 40-49y | 3 (3.3%) | 4 (4.4%) | 4 (5.5%) | 5 (6.7%) | |
| 50-59y | 23 (25.6%) | 19 (21.1%) | 12 (16.4%) | 15 (20.0%) | |
| 60-69y | 43 (47.8%) | 38 (42.2%) | 38 (49.3%) | 32 (42.7%) | |
| above70y | 19 (21.1%) | 16 (17.8%) | 12 (16.4%) | 12 (16.0%) | |
| Age median (IQR) | 62 (58-66) | 62 (55-66) | 63 (57-67) | 62 (54-68) | |

Over the last four years, no significant differences are found on the distribution by region, sex or age group in the SGP network (p-values not significant in Table 4). However, when using larger age groups (25-39 years vs 40-54 years vs 55+ years), significant differences appear (p-value=0.042): between 2019 and 2022, the percentage among 25-39 years old SGPs increased from 2.2% to 14.7% and the percentage among the 55+ years old SGPs decreased from 86.7% to 73.3%, while the 40-54 years age group percentage remained stable (see Figure 4).

Figure 4. Age distribution among the SGP network, 2019-2022.

The comparison of the distribution by region, age and sex of the sentinel GPs and the non-sentinel GP (see Table 5) is based on the most recent available RIZIV/INAMI data of 2021.

Table 5. Region, age and sex distribution: comparing sentinel GPs and non-sentinel GPs.

| | sentinel GPs | | non-sentinel GPs |
|--------------------|--------------|------------|------------------|
| | 2021 | 2022 | 2021 |
| Region | | | |
| Flanders | 44 (60.3%) | 44 (58.7%) | 6057 (60.1%) |
| Wallonia | 21 (28.7%) | 19 (25.3%) | 3241 (32.2%) |
| Brussels | 8 (11.0%) | 12 (16.0%) | 777 (7.7%) |
| Sex of SGPs | | | |
| Female | 28 (38.4%) | 32 (42.7%) | 4608 (45.7%) |
| Male | 45 (61.6%) | 43 (57.3%) | 5467 (54.3%) |
| Age of SGPs | | | |
| less30years | 1 (1.4%) | 2 (2.7%) | 617 (6.1%) |
| 30-39y | 8 (11.0%) | 9 (12.0%) | 2517 (25.0%) |
| 40-49y | 4 (5.5%) | 5 (6.7%) | 1513 (15.0%) |
| 50-59y | 12 (16.4%) | 15 (20.0%) | 1863 (18.5%) |
| 60-69y | 38 (49.3%) | 32 (42.7%) | 2857 (28.4%) |
| above70y | 12 (16.4%) | 12 (16.0%) | 705 (7.0%) |

3.2. POPULATION COVERAGE

For each year, the population coverage is calculated by district (“arrondissement”), province and region and the total of Belgium. The aim is to reach at least 1% coverage of the Belgian population in every district. An overview of the coverage by the SGP network during 2019-2022 is presented in Table 6.

Formula used to estimate the population covered by the SGP network: the number of inhabitants per active GP (defined as having at least 500 contact patients/year based on health insurance data) was calculated in each of the 43 districts in Belgium and further multiplied by the number of sentinel practices (minimum population coverage) or the number of sentinel GPs (maximum population coverage).

Table 6. Overview of coverage by SGP network, 2019 – 2022.

| COVERAGE BY YEAR | Belgium | Brussels | Flanders | Wallonia | N_PRACTICES | N_GPs |
|------------------|---------|----------|----------|----------|-------------|-------|
| COVERAGE1_2022 | 0,74 | 1,54 | 0,73 | 0,59 | 75 | 103 |
| COVERAGE2_2022 | 1,02 | 2,45 | 1,02 | 0,68 | 75 | 103 |
| COVERAGE1_2021 | 0,73 | 1,09 | 0,72 | 0,67 | 73 | 96 |
| COVERAGE2_2021 | 0,96 | 1,36 | 1,05 | 0,70 | 73 | 96 |
| COVERAGE1_2020 | 0,95 | 1,21 | 0,94 | 0,93 | 90 | 141 |
| COVERAGE2_2020 | 1,50 | 1,75 | 1,65 | 1,13 | 90 | 141 |
| COVERAGE1_2019 | 0,95 | 1,35 | 0,90 | 0,96 | 90 | 123 |
| COVERAGE2_2019 | 1,31 | 1,89 | 1,30 | 1,17 | 90 | 123 |

Coverage 1 and sentinel population 1 is calculated on the number of participating *practices*.
Coverage 2 and sentinel population 2 is calculated on the number of participating *GPs*.
N_Practices and N_GPs refer to the regular participating practices/GPs in our SGP network.

Note: info of 2022 is based on number of GP's in 2021, received from RIZIV/INAMI because no recent info of 2022 available (February 2023)

Note: info of 2021 is based on number of GP's in 2020, received from RIZIV/INAMI because no recent info of 2021 available (February 2022)

Note: info of 2020 is based on number of GP's in 2019, received from RIZIV/INAMI because no recent info of 2020 available (February 2021)

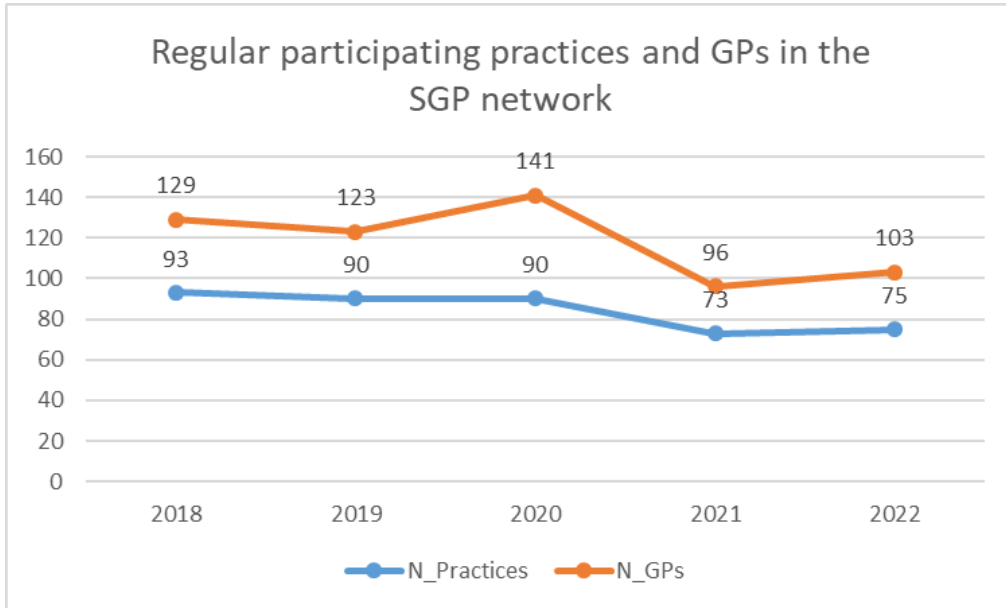
3.3. STABILITY OF THE NETWORK

An overview of the number of participating practices and sentinel GPs in the SGP network for the years 2019 (note: the year 2018 is used as reference year) until 2022 is presented in Table 7 and Figure 5.

Table 7. Regular participating practices and GPs in the SGP network, 2018-2022.

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|------|--------|--------|---------|-------|
| N_Practices | 93 | 90 | 90 | 73 | 75 |
| N_GPs | 129 | 123 | 141 | 96 | 103 |
| growth of N_Pract | / | -3,23% | 0,00% | -18,89% | 2,74% |
| growth of N_GPs | / | -4,65% | 14,63% | -31,91% | 7,29% |

Figure 5. Regular participating practices and GPs in the SGP network, 2018-2022.



Drop in number of regular participating practices, due to:

- High work load for GPs during pandemic period (2020-2021), resulting in low /no regular participation of SGPs
- Retirement of older SGPs

Reinforcement of the network by recruiting new SGPs:

- Overall in Belgium (during recruitment efforts of 2020, 2021 and 2022)
- Focus in specific regions (cfr. white regions on map, see Figures 1-3) (during recruitment efforts of 2022)

4. The SGP network from 2023 onwards

4.1. AGE-GENDER DISTRIBUTION AMONG SENTINEL GPs AND NON-SENTINEL GPs

Target to be reached in coming years: the SGP network should focus on new GPs with the following characteristics

- GPs of younger age (<55 years) (cfr. Table 5 for year 2022)
- less GPs of the Brussels region and more GPs of Wallonia and Flanders (cfr. Table 5 for year 2022)
- female GPs (cfr. Table 5 for year 2022)

to have a similar age-gender and region distribution among sentinel GPs and non-sentinel GPs.

4.2. POPULATION COVERAGE

Target to be reached in coming years: the SGP network should cover

- 1% of its population on coverage² (cfr. Table 6)
- for overall Belgium, all regions, all provinces and all Belgian districts

For a representative coverage of 1% in all districts, provinces and regions in the SGP network, the following (regular participating) GPs are needed in total (see Table 8).

Table 8. Targeted GPs for 1% coverage in the SGP network.

| | Frequency | Percent |
|-----------------|-----------|---------|
| Brussels | 7 | 7,61% |
| Flanders | 61 | 66,30% |
| Wallonia | 24 | 26,09% |
| BELGIUM | 92 | 100,00% |

This means that we need to recruit 42 additional GPs in Flanders, 18 additional GPs in Wallonia and no additional GPs in Brussels. Moreover, a specific focus is needed to the districts where currently no GPs are participating to the SGP network (cfr. white regions on map, see Figures 1-3).

To take into account when recruiting: we need to target to the double number of new GPs (so about 80 new GPs for Flanders and 35 new GPs for Wallonia) because from our experience of the recruitment in 2022, we noticed that almost half of the new GPs/practices willing to participate dropped out after some time and never become a regular participating sentinel GP in our network.

4.3. STABILITY OF THE NETWORK

Target to be reached in coming years: the SGP network should be growing further in the coming years (cfr. growth of N_Practices and N_GPs during 2022 in Table 7) and the annual drop-out rate should be less than 10% with reference to the previous year.

4.4. RECRUITMENT EFFORTS DURING 2023

During 2023, various recruitment efforts were made to increase the number of participating GPs in the SGP network.

A brief overview is given underneath.

- Visibility of the SGP network:
 - Presentation of the SGP network at national and international conferences
 - Presentation of the SGP network to national GP networks (Domus Medica, SSMG)
 - Presentation of the SGP network at LOKS-GLEMS, leaders of the circles (“kringen”), universities, etc.
 - Promotion of the network through Behive, AMUB, Fédérations des maison médicales, newsletters and website
 - Scientific webinars (with Accreditation System for participating GPs)
 - Creation and distribution of flyers
 - Sending targeted invitation letters to GPs
 - Creation of a network video, see
 - NL version: <https://www.youtube.com/watch?v=5D9UjAfle0I>
 - FR version: <https://www.youtube.com/watch?v=Ki075o7VGMw>

- Changing the methodology of the data collection:
 - To reduce the workload for participating GPs: automatic data extraction from the EMD for the weekly aggregated data (implementation from 2024 onwards)
 - Integration of the Barometer 2.0 participating GPs (more information available on <https://www.sciensano.be/en/projects/covid-19-barometer-general-practices-version-20>) into the SGP network (implementation from 2024 onwards)
 - Introduction of new methodologies to collect data (for example exploration of a pop-up in the EMD for case-by-case registration, ad hoc only-once online surveys on specific topics, focus groups among GPs, etc.)

- Benefits for the participating GPs:
 - An individual annual report of the sentinel general practices (the results are compared with those of other practices of the network (anonymously))
 - A newsletter to inform about the activities, reports and articles of the network, etc.
 - Receiving welcome package
 - Access to scientific webinars (with Accreditation System for participating GPs)
 - GPs as part of a network: events, welcome packs, etc (network benefits)
 - Financial compensation of 300€/year for regular participation
 - GPs cited in scientific publications: author group
 - Possibility to represent the network in the steering committee: participation in decisions

REFERENCES

- (1) Last JM. A Dictionary of Epidemiology. Oxford University Press; 2004.
- (2) Green LA, Fryer GE, Jr., Yawn BP, Lanier D, Dovey SM. The ecology of medical care revisited. *N Engl J Med* 2001; 344(26):2021-2025.
- (3) White KL. The ecology of medical care: origins and implications for population-based healthcare research. *Health Serv Res* 1997; 32(1):11-21.
- (4) Van Casteren V. Thirty years Registration Network of Sentinel General Practitioners. *Arch Public Health* 2009; 67(Suppl. 2):3-15.
- (5) Van Casteren V, Leurquin P. Eurosentinel: development of an international sentinel network of general practitioners. *Methods Inf Med* 1992; 31(2):147-152.
- (6) Meci A, Du Breuil F, Vilcu A. et al. The Sentiworld project: global mapping of sentinel surveillance networks in general practice. *BMC Prim. Care* 23, 173 (2022). <https://doi.org/10.1186/s12875-022-01776-x>
- (7) Van den Block L, Van Casteren V, Deschepper R. et al. Nationwide monitoring of end-of-life care via the Sentinel Network of General Practitioners in Belgium: the research protocol of the SENTI-MELC study. *BMC Palliat Care* 6, 6 (2007). <https://doi.org/10.1186/1472-684X-6-6>
- (8) Van den Block L, Onwuteaka-Philipsen B, Meeussen K. et al. Nationwide continuous monitoring of end-of-life care via representative networks of general practitioners in Europe. *BMC Fam Pract* 14, 73 (2013). <https://doi.org/10.1186/1471-2296-14-73>

ANNEXES

2022

Bensemmane S, De Schreye R. (2022). Varicella surveillance among the patient population in Belgian general practice between 2019 and 2021. *Abstract* published in the *Programme Book of 95th EGPRN meeting*, 20-23 October 2022, Antwerp (Belgium), p. 87.

Bensemmane S. (2022). Physical activity on prescription in Belgian general practice: current state of affairs. *Abstract* published in the *Programme Book of 95th EGPRN meeting*, 20-23 October 2022, Antwerp (Belgium), p. 57.

Cuschieri S, Bensemmane S, De Schreye R, Moreels, S. (2022). Caring for Long Covid-19 patients in primary health care: a twinning study between Malta and Belgium. *Abstract* published in the *Programme Book of 95th EGPRN meeting*, 20-23 October 2022, Antwerp (Belgium), p. 108.

Moreels S, Bensemmane S, De Schreye R. (2022). Long COVID in primary care: study among Belgian general practitioners. *Abstract* published in the *Program Book of European Forum for Primary Care (EFPC) 2022 Conference*, 26-27th September 2022, Ghent (Belgium), pp.80-81.

Bensemmane S, De Schreye R. (2022). Management of tick bites and suspicion of Lyme disease in Belgian primary care : compliance with national guidelines. *Abstract* published in the *Programme Book of the 94th EGPRN Meeting*, İstanbul-Turkey, 12-15 May 2022, p.110.

Moreels S, De Schreye R. (2022). Risk factors and prevention concerning falls among older general practice patients in Belgium, 2019-2020. *Abstract* published in the *Abstract Book of EU Falls Festival 2022*, 4-5th April 2022, Leuven (Belgium), p.103.

Artikel « Les médecins vigies, premiers lanceurs d'alerte en cas d'épidémie », *Le Soir*, 23 februari 2022, <https://www.lesoir.be/426019/article/2022-02-23/les-medecins-vigies-premiers-lanceurs-dalerte-en-cas-depidemie>

Guerrisi C, Thomas B, Ordax Diez A, Van Cauteren D, Lozano Alonso JE, Moreels S, Falchi A, Vega Alonso T, Bonmarin I, Raude J, Vilcu AM, Hanslik T, Debin M, Rossignol L, Colizza V, Souty C, Blanchon T. (2022). Initial risk perception and feeling of preparedness of primary care physicians regarding the COVID-19 pandemic in Belgium, France and Spain in February 2020. Article published in *BMC Primary Care*, 23, 18 (2022). <https://doi.org/10.1186/s12875-021-01588-5>

Bossuyt N, Vermeulen M, Debouverie L, De Schreye R, Moreels S, Bustos Sierra N, Barbezange C, Denayer S, Dufrasne F. (2022). Wekelijks bulletin luchtweginfecties week x-2022 / Bulletin hebdomadaire infections respiratoires semaine x-2022 / Weekly bulletin respiratory infections week x-2022. Report. Brussel, Sciensano.

2021

Bensemmane S, Vanden Berghe W, De Schreye R. (2021). Sexually Transmitted Infections surveillance among the patient population in Belgian general practice. *Abstract* published in *European Journal of Public Health*, November 2021, 31, suppl. 3: 514.

Moreels S, Boffin N, De Schreye R. (2021). Falls among older general practice patients: risk factors and fall prevention in Belgium, 2019-2020. *Abstract published in European Journal of Public Health*, November 2021, 31, suppl. 3: 580. <https://doi.org/10.1093/eurpub/ckab165.638>

De Schreye R, Van Vyve A, Moreels S, Goderis G, Scholtes B, Coenen S, Verrijken G. (2021). Samenvattend rapport COVID-19 vaccinatiebereidheid bij huisartsen. Rapport. Brussel, Sciensano. Rapportnummer: D/2021/14.440/27.

Bossuyt N, Vermeulen M, Vos B, De Schreye R, Moreels S, Bustos Sierra N, Thomas I, Barbezange C. (2021). Wekelijks bulletin luchtweginfecties week x-2021 / Bulletin hebdomadaire infections respiratoires semaine x-2021 / Weekly bulletin respiratory infections week x-2021. Report. Brussel, Sciensano.

2020

Vanden Berghe W, Lecompte A, Bensemmane S, De Schreye R, De Baetselier I. (2020). Surveillance van seksueel overdraagbare aandoeningen 2017-2019. Rapport. Brussel, België : Sciensano; Rapportnummer: D/2020/14.440/85.

Bossuyt N, Vermeulen M, De Schreye R, Moreels S, Vos B, Bustos Sierra N, Thomas I, Barbezange C. (2020). Wekelijks bulletin luchtweginfecties week x-2020 / Bulletin hebdomadaire infections respiratoires semaine x-2020 / Weekly bulletin respiratory infections week x-2020. Report. Brussel, Sciensano.

Boffin N, Antoine J, Van Baelen L, Moreels S, Doggen K. (2020). General practice patients starting treatment for substance use problems: observations from two data sources across levels of care. *BMC Public Health*. 2020 June 18. 20, 960. <https://doi.org/10.1186/s12889-020-09038-0>

Verkissen M, Penders Y, Onwuteaka-Philipsen B, Moreels S, Donker G, Vega Alonso T, Van den Block L, Deliëns L. (2020). End-of-life communication in advanced cancer: international trends (2009-2014). *BMJ Supportive & Palliative Care* 2020, Apr 27. <https://doi.org/10.1136/bmjspcare-2019-001999>

2019

Symposium 25 jaar Intego en 40 jaar Huisartsenpeilpraktijken. *Vesalius-tijdschrift*, nr. 4, december 2019, 25-26.

Geebelen, L., Van Cauteren, D., Devleeschauwer, B., Moreels, S., Tersago, K., Van Oyen, H., Speybroeck, N., Lernout, T. (2019). Schatting van de incidentie van de klinische manifestaties van Lyme borreliose in Vlaanderen op basis van primaire surveillancegegevens en een meta-analyse, 2015-2017. *Vlaams Infectieziektenbulletin*, 2019/3, 13-23.

Boffin N, Van Casteren V, De Ridder K. (2019). Welke zorg krijgen patiënten uit de huisartspraktijk voor en na een suicidepoging? Een onderzoek in Vlaanderen door het Belgische Netwerk van Huisartsenpeilpraktijken.

De Nooijer K, Pivodic L, Deliëns L, Miccinesi G, Vega Alonso T, Moreels S, Van den Block L. (2019). Primary palliative care for older people in three European countries: a mortality follow-back quality study. *BMJ Support Palliat Care* 2019, Oct 17. <https://doi.org/10.1136/bmjspcare-2019-001967>

Boffin N, Van Casteren V, De Ridder K. (2019). Care of general practice patients preceding and following a suicide attempt: observational study in Flemish general practices. *BMJ Open* 2019, 9(5):e028546. <https://doi.org/10.1136/bmjopen-2018-028546>.

Bossuyt N, Van Cauteren D, Bustos Sierra N, Thomas I., Barbezange C. (2019). Griep Bulletin week x-2019 / Bulletin Grippe semaine x-2019 / Weekly Flu Bulletin week x-2019. Report. Brussel, Sciensano.

Miranda G, Baetens J, Bossuyt N, Bruno O, De Baets B. (2019). Real-time prediction of influenza outbreaks in Belgium. *Epidemics*, sept 2019, 28. <https://doi.org/10.1016/j.epidem.2019.04.001>.

Segaloff H, Melidou A, Adlhoch C, Pereyaslov D, Robesyn E, Pasi P, Olsen S, WHO European Region, European Influenza Surveillance Network. (2019). Co-circulation of influenza A(H1N1)pdm09 and influenza A(H3N2) viruses, World Health Organization (WHO) European Region, October 2018 to February 2019. *Eurosurveillance*, 28/02/2019, 24 (9). <https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.9.1900125>.

Geebelen L, Van Cauteren D, Devleeschauwer B, Moreels S, Tersago K, Van Oyen H, Speybroeck N, Lernout T. (2019). Combining primary care surveillance and a meta-analysis to estimate the incidence of the clinical manifestations of Lyme borreliosis in Belgium, 2015-2017. *Ticks and Tick-borne Diseases* 2019, <https://doi.org/10.1016/j.ttbdis.2018.12.007>

CONTACT

Sarah Moreels • T+32 2 642 50 36 • sarah.moreels@sciensano.be

MORE INFORMATION

—
Visit our website
>www.sciensano.be or
contact us at
>info@sciensano.be

Sciensano • Rue Juliette Wytsmanstraat 14 • Brussels • Belgium • T + 32 2 642 51 11 • T press + 32 2 642 54 20 •
info@sciensano.be • www.sciensano.be

Responsible editor: C. Léonard, Managing director • Rue Juliette Wytsmanstraat 14 • Brussels • Belgium • D/2023.14.440/71