Are Covid-19 Diagnostic Tests being stopped in the Community? A Study in the Period from October 2022 to March 2024 in a General Medicine Office of Toledo (Spain)

Jose Luis Turabian*

Specialist in Family and Community Medicine, Health Center Santa Maria de Benquerencia. Regional Health Service of Castilla la Mancha (SESCAM), Toledo, Spain.

ABSTRACT

Background: Since the disappearance of the health alarm in many countries COVID-19 tests are carried out in health services only in certain situations, so people with symptoms in the community frequently opted to be tested at home, but it has been reported that the demand for tests has dramatically decreased.

Objective: Analyze the rate of COVID-19 tests carried out both in health services and at home by the patient and subsequently communicated to the General Practitioner.

Methodology: An observational, longitudinal, and prospective study of adult patients in general medicine from October 1, 2022, to March 1, 2024

Results: From October 2022 to March 2024 (18 months), 133 COVID-19 tests were recorded on a population of 2,000 people treated in the consultation, both carried out in the health services and in the patient's home and subsequently communicated to the GP. The COVID-19 test rate per semester with respect to the consultation population was progressively lower in a statistically significant way: 2.90% from October 2022 to March 2023, 2.15% from April 2023 to September 2023, and 1.60% from October 2023 to March 2024 (X2= 9.6768; p= .00792). The rate of positive versus negative COVID-19 tests per semester with respect to the total number of tests performed, showed significant differences: (71% positive and 29% negative from October 2022 to March 2023; 81% positive and 19% negative from April 2023 to September 2023; and 47% positive and 53% negative from October 2023 to March 2024; X2= 10.3636. p= .005618).

Conclusion: In the general practice setting in Toledo, Spain, from October 2022 to March 2024, a progressive and significant decrease in the number of COVID-19 tests performed both in health services and at home is observed. However this behavior seems to be supported by a lower positivity rate in the tests carried out. However, this may pose a risk to public health and people's behaviors, in addition to limiting diagnostic capacity.

Keywords: COVID-19; COVID-19 Testing; COVID-19 Self-Testing; Epidemiology; General Practice; Point of Care Testing; SARS-CoV-2.

Address of Corresponding Author

Jose Luis Turabian; Specialist in Family and Community Medicine, Health Center Santa Maria de Benquerencia. Regional Health Service of Castilla la Mancha (SESCAM), Toledo, Spain.

E-mail: jturabianf@hotmail.com

Crossref Doi: https://doi.org/10.36437/irmhs.2024.7.1.C

Introduction

The emergency of the coronavirus disease 2019 (COVID-19) pandemic is over, but the virus continues to circulate. And it won't stop doing so in the near future. Therefore, periods of increased infections can be expected. However, the measurement is no longer as comprehensive as in the first years and since the summer of 2022, the up and down oscillations of the transmission were no longer listed in many places. Thus, unfortunately, in the current phase many of the community surveillance studies, in many countries, such as Spain, that tracked infection

levels have ended, so it is not clear how many people are infected nor can the evolution of new waves be evaluated; So, there is no data available to base it on to predict how covid-19 will develop in the coming months.[1,2]

In this way, the virus circulates and is confused between allergies and other mild viruses. In this scenario, in many places, there could be an "under-reporting" of cases.[3] Additionally, COVID-19 testing has increasingly shifted toward an at-home model. All these circumstances make it very difficult to estimate the true magnitude of the current situation.[4]

However, frequently (although predictably not 100%), people with a positive test at home do communicate this circumstance to their family doctor, to seek treatment and/or sick leave. In this way, knowing the incidence of COVID-19 cases with a positive test at home that is reported to the GP, allows the official under reporting to be corrected (although it will still represent a minimal incidence since there will be sick people who do not take a test at home and who even if they are positive at home, do not report it to the GP). In fact, the sales data for antigen tests for COVID-19 has been proposed as an indicator of the variation in incidence in the community.[5]

Many countries are now transitioning to strategies to manage COVID-19 as an endemic disease (when it exists at a predictable level that does not require special socio-sanitary interventions).[4] This evolution towards an endemic phase of covid-19 is usually described as "favourable." Many people are becoming comfortable living alongside COVID-19, even though the average number of daily deaths is still two to four times the long-term average for influenza, and higher on a seasonally adjusted basis.[6-8]

As a consequence of this context, COVID-19 has become a “normal” infection comparable to the common cold or the flu, so that when a person has “cold” symptoms, it would seem that the patient or the people in their family, or close contacts or the health system and society as a whole, do not give importance to this disease, even when secondary cases of transmission appear in close people, or there are people at risk in the environment close to the patient. In this way, in addition to the fact that the health system has stopped carrying out diagnostic tests, patients with "cold" symptoms probably no longer take tests at home. Thus, the indicator of consumer purchases of home tests, as indicative data on the evolution of COVID-19 cases (4), would lose its usefulness.

In this perception, the performance of tests in health services and the communication of tests at home should show a decreasing number at the general practitioner (GP) level. If this were the case, on the one hand, we would know less and less about the incidence of COVID-19 in the community, and the GP would lose the role of providing more valid incidence figures than official statistics.

In this framework, to assess this hypothesis of a decrease in COVID-19 tests carried out in health services and tests at home and subsequently communicated to the GP, a longitudinal and prospective study of COVID-19 tests was conducted from October 1, 2022, to March 31, 2024, in a general medicine office, with the objective of evaluating the number of tests carried out in health services and tests at home and subsequently communicated to the GP.

Material and Methods

Design and Emplacement

An observational, longitudinal, and prospective study of COVID-19 infections was conducted from October 1, 2022, to March 31, 2024, in a general medicine office in the Santa Maria de Benquerencia Health Center, Toledo, Spain, which has a list of 2,000 patients > 14 years of age (in Spain, GP care for people > 14 years of age, except for exceptions requested by the child's family and accepted by the GP). The general methodology of the study has already been published.[9]

Outcome of interest

Analyze the rate of COVID-19 tests carried out both in health services and at home by the patient and subsequently communicate to the GP.

Diagnosis of covid-19

The diagnosis was performed with reverse transcriptase polymerase chain reaction oropharyngeal swab tests or antigen testing.[10]

Sample Size

All patients who met the criteria for COVID-19 infection from October 1, 2022, to March 31, 2024, and who were treated in the general medicine consultation object of the study, were included.

Statistical analysis

The bivariate comparisons were performed using the Chi-Square test (X2). The degrees of freedom were calculated as: (rows – 1) × (columns – 1).

Ethical issues

No personal data of the patients were used, but only group results, which were taken from the clinical history.

Results

From October 2022 to March 2024 (18 months), 133 COVID-19 tests were recorded both carried out in the health services and in the patient's home and subsequently communicated to the GP, on a population of 2,000 people treated in the consultation. The COVID-19 test rate by semester with respect to the consultation population was progressively lower in a statistically significant way: 2.90% from October 2022 to March 2023, 2.15% from April 2023 to September 2023, and 1.60% from October 2023 to March 2024 (X2 = 9.6768. p= .00792. Significant at p < .05). (**Table 1, Figure 1**)

COVID-19 TEST RATE BY SEMESTER WITH RESPECT TO POPULATION OF THE CONSULTATION (N=2.000 people)	October 2022 to March 2023 (6 months	April 2023 to September 2023 (6 months)	October 2023 to March 2024 (6 months)	STATISTICAL SIGNIFICANCE (Df=2)
PEOPLE FOR WHOM COVID-19 TEST IS CARRIED OUT IN HEALTH SERVICES OR COMMUNICATE THEIR PERFORMANCE AT HOME (N=133 in the 18 months on a population of 2.000 people)	58 (2.90)	43 (2.15)	32 (1.60)	X2= 9.6768 . p= .00792. Significant at p <.05.
PEOPLE FOR WHOM THE COVID-19 TEST IS NOT CARRIED OUT IN HEALTH SERVICES OR THEY DO NOT COMMUNICATE ITS PERFORMANCE AT HOME (N=1.867 in the 18 months on a population of 2.000 people)	1.809 (90.45)	1824 (91.20)	1968 (98.40)	

( ): Denotes percentages; NS: Not significant; Df= degrees of freedom

Table 1: Covid-19 Test Rate by Semester with Respect to Consultation Population from October 2022 to March 2024.

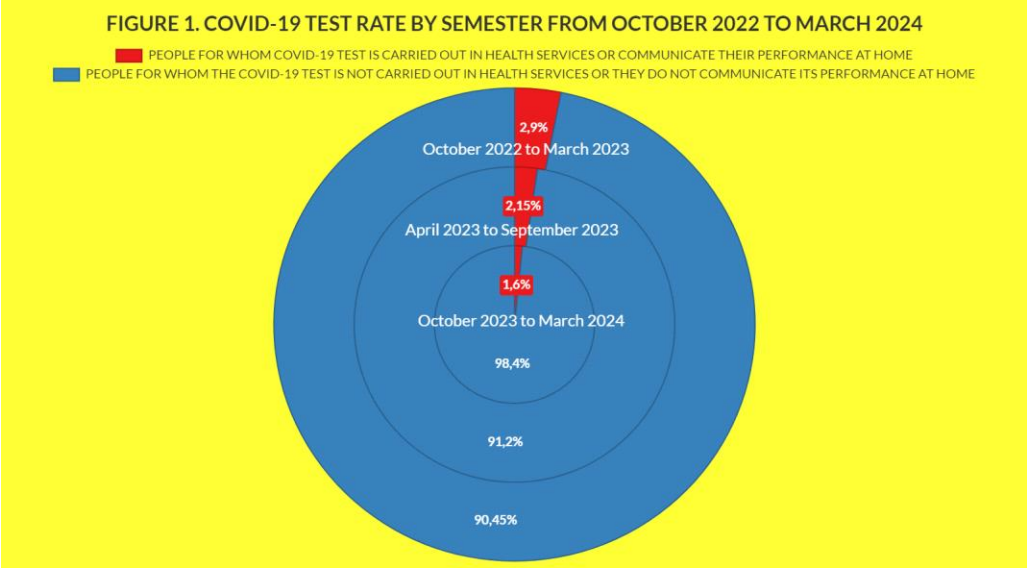

Figure 1: Covid-19 Test Rate by Semester from March 2024 to October 2022

The rate of positive versus negative COVID-19 tests by semester with respect to the total number of tests performed showed significant differences: from October 2022 to September 2023, positive tests predominated, which was reversed during the third semester studied from October 2023 to March 2024, where negative tests predominated: 71% positive and 29% negative from October 2022 to March 2023; 81% positive and 19% negative from April 2023 to September 2023; and 47% positive and 53% negative from October 2023 to March 2024 (X2= 10.3636. p= .005618. Significant at p < .05). (**Table 2, Figure 2**)

COVID-19 TEST RATE BY SEMESTER WITH REGARD TO THE TOTAL TEST CARRIED OUT (N= 133)	October 2022 to March 2023 (6 months	April 2023 to September 2023 (6 months)	October 2023 to March 2024 (6 months)	STATISTICAL SIGNIFICANCE (Df=2)
POSITIVE covid-19 test (N= 91)	41 (71)	35 (81)	15 (47)	X2= 10.3636. p= .005618. Significant at p <.05.
NEGATIVE covid-19 test (N= 42)	17 (29)	8 (19)	17 (53)	
Total= 133	58 (100)	43 (100)	32 (100)	

( ): Denotes percentages; NS: Not significant; Df= degrees of freedom

Table 2: Rate of Positive and Negative Covid-19 Tests Per Semester with Respect to the Total Tests Performed.

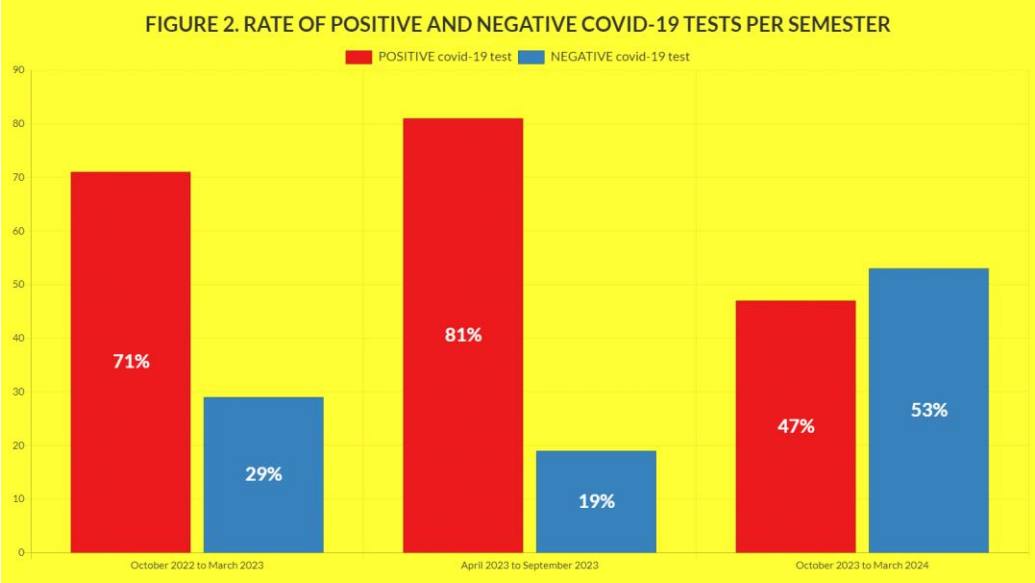

Figure 2: Rate of Positive and Negative Covid-19 Tests per Semester.

Discussion

1. Main findings

Our main results were:

1. The rate of COVID-19 tests carried out by semester with respect to the consultation population was progressively lower in a statistically significant way.
2. The rate of positive covid-19 tests showed a trend toward decreasing, versus negative tests, which were increasing.

In Spain, since March 2022, cases were no longer measured in the general population, and monitoring was restricted to those over 60 years of age. The data are calculated with an estimate made from what was reported by health centers and sentinel hospitals.[11] However, because in some countries, such as Spain, GP are the gateway for all patients to the system, and each person is assigned a GP, based on a geographical population[12], the data of COVID-19 cases at the GP consultation level (with tests done at home or in health services) would be an acceptable indicator.[9,13] In any case, probably a certain number of cases of symptoms of viral infections in the community may not be done diagnostic tests for different reasons, and those that were performed will be more likely in at-risk and/or vulnerable patients. Therefore, it can be thought that the number of infections at the GP level will be possibly underestimated. Based on the fact of the decrease in testing at home (in addition to the legal limitation of testing in health services), the global data on tests performed on the GP's patient list loses much of its value.

2. Comparison with other studies

The COVID-19 pandemic highlighted the value of cheap, good enough methods for detecting disease. No one likes swabbing their nose to test for covid-19, but many people had reason to be grateful for at-home diagnostic tests during the height of the pandemic. Users could find out within 15 minutes if they were infected with the coronavirus and if they were at risk of exposing friends or family to COVID-19, all without leaving home.[14]

People used testing to meet a wide range of needs during the pandemic period. In February 2023, 1 in 10 adults in England reported continuing to use testing, including many who did so because they felt it was the right thing to do or because they were seeking reassurance.[15] In any case, we must take into account the inequalities in access to tests; only about 35% of the tests administered worldwide have been used in low- and lower-

middle-income countries, where 75% of the world's population lives.[16] In any case, the demand for testing has decreased so dramatically.[17] Why are communities stopping doing rapid diagnostic tests for COVID-19? In Spain, in the middle of the pandemic, these rapid tests became widespread and the Ministry of Health and the communities acted in a coordinated manner; Now, as the tests run out, the stock is not renewed and the communities stop doing them or do them to a lesser extent.[18]

Rapid tests are better used as an indicator of when you get COVID-19 than when you are infected. Samples taken from people with COVID-19 who had very low levels of the virus (below what a rapid test can detect) failed to infect cells in a Petri dish. This suggests that people with small amounts of the virus would also not be able to infect another person.[19] A large meta-analysis of more than 150 independent rapid testing studies reported that, on average, the tests correctly detect a COVID-19 infection 73% of the time when a person is symptomatic. In the case of asymptomatic infections, the accuracy drops to 55%.[20] Furthermore, the tests do not lose accuracy over time. Several studies have revealed that rapid tests work just as well with the first omicron variant as with earlier variants of the virus. This is because the tests are designed to detect the nucleoprotein and it has not mutated, so you can be fairly confident that the tests will continue to work as well in the future as they did in the past.[21,22]

However, it has been reported that in 2022 more than a quarter of people in the UK with symptoms compatible with COVID-19 will not be tested.[23] Having mild symptoms, poor knowledge of nearby testing locations, and certain demographic factors have been identified as barriers to performing COVID-19 testing.[24] How symptoms of COVID-19 cases in 2022/23 were different from those in 2020, and they showed symptoms of upper respiratory tract infection, like a common cold, this can do away with preventive precautions.[25] Thus, one of the reasons for the decrease in testing in the community can be attributed to the general improvement of the pandemic, with fewer cases less transmission, and fewer people experiencing symptoms or milder symptoms.[17] Likewise, people may think that since we now have vaccines, testing is not important. The sense of urgency caused by the COVID-19 pandemic (especially before the arrival of vaccines) has already begun to fade.[14] And on the other hand, fatigue due to the duration of the pandemic could be another reason.[17]

However, self-assessment and at-home testing that became normalized during the pandemic gave people more control over their own health.[16] Large-scale testing had the public health benefit of changing people's behaviors.[15] However, this situation seems to have been relegated to the current endemic phase. The first point of contact with the health system during the pandemic was through the GP, and based on diagnosis, and it should continue to be. It is important to maintain that concept to ensure that when the next pandemic hits, we do not have to start from scratch again.[14]

Study limitations and strengths

1. The number of cases was small.
2. Non-randomized design is a limitation for the generalization of the results, although by including all cases that were consulted with the GP, and taking into account the structure of the health system, the vast majority of cases were probably included.
3. May have been overlooked asymptomatic cases that did not attend GP consultation, as no surveillance or systematic screening was done. Negative tests carried out at home on contacts of cases were probably not reported to the GP.

Conclusion

From October 2022 to March 2024, there was a progressive and significant decrease in the number of COVID-19 tests carried out both in health services and at home and a decrease in the number of positive tests over those carried out. It is hypothesized that both the health service and the population lost interest in carrying out COVID-19 tests when catarrhal respiratory symptoms

occur (loss of fear of the disease, fatigue on the subject of COVID-19, mild respiratory symptoms, regulatory barriers in the health services, economic cost in purchasing tests, etc.), and this behavior seems to be supported by a lower positivity rate in the tests performed.

However, this situation can imply a risk to public health, and people's behaviors, and limits the diagnostic capacity. Given that COVID-19 tests, both in health services and at home, tend to stop being done, their data at the GP level lose interest, and emphasis should be placed on other alternative indicators to provide early warning of future waves, in addition to the number of hospitalizations, such as virus levels in wastewater, the frequency of visits to the GP for upper respiratory tract infection, and the estimation of the community risk based on what is known about vaccination rates and previous infections.

References

1. Davis N (2023) UK almost 'flying blind' on Covid this autumn, experts say. As cases rise, scientists say country is mostly in the dark about how infections could play out in coming months: The Guardian; Sat 5 Aug. https://www.theguardian.com/world/2023/aug/05/uk-almost-flying-blind-on-covid-this-autumn-experts-say
2. Turabian JL (2022) An ostrich strategy for covid-19 is too risky. BMJ; 377: o1112. doi: https://doi.org/10.1136/bmj.o1112
3. Viciosa M (2022) [Seventh wave, first big pandemic hit or acceptable covid? While Spain experiences the feeling that 'everyone is getting infected' again, the seventh wave presents unique characteristics that we analyze with experts]. Newtral; 11 mayo. https://www.newtral.es/septima-ola-primer-gran-coletazo-pandemico-o-covid-asumible/20220511/
4. Charumilind S, Craven M, Lamb J, Sabow A, Singhal S, Wilson M (2022) When will the COVID-19 pandemic end? McKinsey & Company; July 28. https://www.mckinsey.com/industries/healthcare/our-insights/when-will-the-covid-19-pandemic-end
5. Turabian JL (2023) COVID-19: From Epidemic to Endemic? The Evolution Remains Unpredictable. New Indicators Needed. J Infect Dise Treat; 1(1): 1-4. doi: http://dx.doi.org/10.61440/JIDT.2023.v1.02
6. Linde P (2023) [The new variants of the covid do not change anything: the infections have increased in summer, but the severity has not]. El País; 18 ago. https://elpais.com/sociedad/2023-08-18/las-nuevas-variantes-de-la-covid-no-cambian-nada-los-contagios-han-aumentado-en-verano-pero-la-gravedad-no.html
7. Dyer O (2023) Covid-19: Infections climb globally as EG.5 variant gains ground. BMJ; 382: p1900. https://doi.org/10.1136/bmj.p1900
8. Cornerford R (2023) Covid-19 cases on the rise in UK amid waning immunity. The Telegraph 29th July 2023. https://www.telegraph.co.uk/news/2023/07/29/covid-19-uk-infections-virus-coronavirus-rise-booster/
9. Turabian JL (2024) Incidence Rate of Covid-19 Infection in People with Fourth Dose of Vaccines Bivalent Mrna from October 2022 to October 2023 in A General Medicine Office in Toledo (Spain). In Press. J Health Care and Research. doi: https://doi.org/10.31579/2639-4162/133
10. Ministerio de Sanidad (2021) [COVID-19 early detection, surveillance and control strategy. Updated December 1, 2021]. https://www.sanidad.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf
11. Linde P (2023) [Once again surrounded by people with covid: are we facing a new

wave? Infections have been rising all summer, but no greater severity has been detected and hospitals are operating normally]. El País; 12 SEPT. https://elpais.com/sociedad/2023-09-12/otra-vez-rodeados-de-gente-con-covid-estamos-ante-una-nueva-ola.html

12. Turabian JL (1995) [Notebooks of Family and Community Medicine. An introduction to the principles of Family Medicine]. Madrid: Díaz de Santos. 1995. https://www.amazon.co.uk/Cuadernos-medicina-familia-y-comunitaria/dp/8479781920
13. Turabian JL (2020) Incidence Rate of Acute Respiratory Infections in General Medicine as a Tool to Correcting Official Data of Covid-19 in Places where the Tests of Polymerase Chain Reaction are not Accessible. Epidemol Int J; 4(S1): 000S1-005. doi: https://doi.org/10.23880/eij-16000S1-005
14. Eisenstein, M. (2023). Putting low-cost diagnostics to the test. doi: https://doi.org/10.1038/d41586-023-03576-4
15. COVID-19: general public testing behaviours. Published 19 October 2023, Gob.UK, https://www.gov.uk/government/publications/lfd-tests-how-and-why-they-were-used-during-the-pandemic/covid-19-general-public-testing-behaviours
16. Hannay E, Pai M (2023) Breaking the cycle of neglect: building on momentum from COVID-19 to drive access to diagnostic testing. Eclinical Mediciner; 57:101867. doi: https://doi.org/10.1016%2Fj.eclinm.2023.101867
17. Wan W (20219 Testing helps stop coronavirus transmission. Officials say some people don't want the inconvenience or to quarantine after getting results. The Washington Post; March 4. https://www.washingtonpost.com/health/2021/03/04/covid-testing/
18. Goiri F (2024) ["Why are the CCAA stopping doing rapid flu and covid diagnostic tests?"]. El Mundo; Viernes, 19. https://www.elmundo.es/ciencia-y-salud/salud/2024/01/19/65a9552ee9cf4a43218b457f.html
19. Drain PK, Dalmat RR, Hao L, et al. (2023) Duration of viral infectiousness and correlation with symptoms and diagnostic testing in non-hospitalized adults during acute SARS-CoV-2 infection: A longitudinal cohort study. J Clin Virol; 161: 105420. doi: https://doi.org/10.1016/j.jcv.2023.105420
20. Dinnes J, Sharma P, Berhane S, et al. (2022) Rapid, point-of-care antigen tests for diagnosis of SARS-CoV-2 infection. Cochrane Database of Systematic Reviews; doi: https://doi.org/10.1002/14651858.CD013705.pub3
21. Smith DG (2023) Do Rapid Tests Still Work? The New York Times; Jan. 25. https://www.nytimes.com/2023/01/25/well/mind/covid-rapid-tests.html
22. Soni A, Herbert C, Filippaios A, et al. (2022) Comparison of Rapid Antigen Tests' Performance Between Delta and Omicron Variants of SARS-CoV-2. A Secondary Analysis From a Serial Home Self-testing Study. Ann Intern Med; 175: 1685-92. doi: https://doi.org/10.7326/M22-0760
23. AGENCIA. [Why are there people with Covid symptoms who don't get tested? An investigation points out the reasons and barriers when taking a Covid test that make different people not go to it despite having symptoms]. ConSalud; 20 ENERO. https://www.consalud.es/comunicados/por-gente-sintomas-covid-no-prueba_108707_102.html
24. Graham MS, May A, Varsavsky T, et al. (2022) Knowledge barriers in a national

symptomatic-COVID-19 testing programme. PLOS Global Public Health 2(1): e0000028. doi: https://doi.org/10.1371/journal.pgph.0000028

25. Turabian JL (2022). Covid-19 Breakthrough Infections In Vaccinated People With Vaccine Booster In 2022 Versus Covid-19 Cases In Unvaccinated People In 2020: A New Disease Whose Clinic We Should Know or Another Cause of The Old Symptoms of The Common Cold?. J General medicine and Clinical Practice; 5(2). doi: https://doi.org/DOI:10.31579/2639-4162/060

How to cite this Article: Turabian. J. L; Are Covid-19 Diagnostic Tests being stopped in the Community? A Study in the Period from October 2022 to March 2024 in a General Medicine Office of Toledo (Spain)*;* Int. Res. Med. Health Sci., 2024; (7-1): 21-29; doi: https://doi.org/10.36437/irmhs.2024.7.1.C
Source of Support: Nil, **Conflict of Interest:** None declared.
Received: 2-2-2024; **Revision:** 18-3-2024; **Accepted:** 22-3-2024