

Mini Audit

The possibilities of rapid testing on St. Maarten

COVID-19 Test

Laboratory analysis

SAMPLE

Virus sick test

N

covid-19 coronavirus.

UP

Laboratory Test

Patient Name: _____

Address: _____

Date: _____

Medical Case: _____

Laboratory Test

Results

Positive

Time(minutes)

ESC(cfu/ml)**

COVID-19 Test
 Negative



General Audit Chamber

Algemene Rekenkamer

November 2020



This document is an English translation of the original Dutch language report entitled: "*Mini-audit naar de mogelijkheden van sneltesten op Sint Maarten*".
In the event of textual contradictions or any other differences, the original Dutch text will prevail.

November 25, 2020
General Audit Chamber, Juancho Yrausquin Blvd #10, unit 4 & 5.

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INTRODUCTION

The coronavirus. Globally, countries are struggling to control the virus. St. Maarten is no exception. In March 2020, the World Health Organization (hereafter: WHO) advised: test, test, test, to manage outbreaks of the virus.¹ The organization was referring primarily to the use of the rt-PCR test.² To date, these tests are considered the most accurate, and are often referred to as the 'gold standard'. Unfortunately, PCR is expensive, complicated and there is a scarcity of tests and test material, including the reagent³, swabs, and plastic ampules for these swabs.⁴ On Sint Maarten - at the time of writing this report - only the PCR test is used for the diagnosis of the coronavirus.

Expanding the test capacity is necessary because a vaccine is not readily available and prolonged lockdowns are disastrous for the economy.

In the interim, the Netherlands has found several rapid tests to be [sufficiently reliable](#).⁵ According to reports, rapid tests in the Netherlands are cheaper and can be administered more quickly on a large scale. Whether a person tests positive for the virus becomes evident within 15 minutes. This speed frees up lab personnel normally needed to perform PCR-tests. In this mini audit, we present the difference between the PCR-test and rapid tests, analyze the costs (affordable for Sint Maarten?), explain the accuracy of each test and the possibilities of expanding the country's test capacity.

On November 5th, the Ministry of Health, Social Development and Labor (hereinafter: VSA) provided the General Audit Chamber with information on this subject. We thank the Minister and his ministry for their cooperation. In the interim, a regulation went into effect on November 25th, 2020, introducing the requirement of antigen tests for travelers. A negative test administered within 48 hours before departure is required for entry to the island.

The Netherlands will make rapid tests available for the islands.⁶ In light of this, we may conduct a more comprehensive audit in the future based on the advice of the Outbreak Management Team (hereinafter: OMT). We hope that sufficient rapid tests, which are cheaper, will be made available for Sint Maarten.

¹ <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020>

² The reverse transcription PCR (rt-PCR): An amplification technique in which the increase of DNA in the test tube can be followed at any time.

³ Chemicals needed for the test.

⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7526079/>

⁵ Algemeen Dagblad, October 7, 2020; <https://www.ad.nl/binnenland/eerste-corona-supersneltests-goedgekeurd-doorbraak-voor-vastgelopen-testketen~a11eeac9/?referrer=https%3A%2F%2Fwww.google.com%2F>

⁶ <https://koninkrijk.nu/2020/11/18/nederland-deelt-sneltesten-met-de-caribische-eilanden/>

1. REVIEW

1.1 St.Maarten's approach

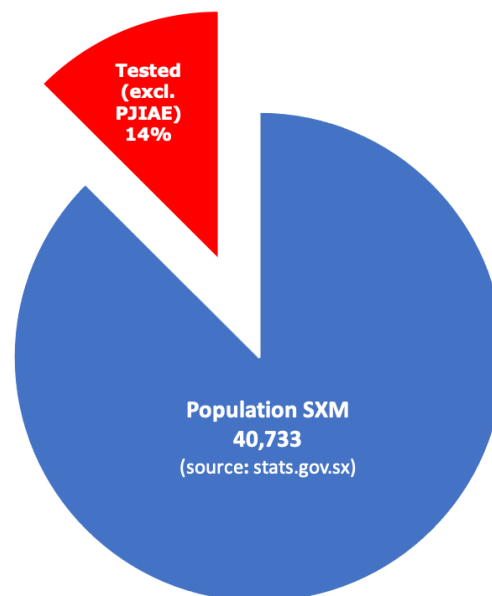
The Ministry of Health, Social Development & Labor (hereafter: VSA) is responsible for drafting and implementing the COVID-19 testing policy for St. Maarten. The departments within the ministry work closely with local laboratories.⁷

Between mid-March and the cutoff date of this audit (November 22nd, 2020), a total of 7,200 PCR tests were administered, of which 1,373 at the airport. St. Maarten recorded 1,007 infections and 25 deaths, which corresponds to a "positivity rate" of 14%.⁸ On average, there were 10 new infections (53% of the peak) every day as of the audit cutoff date.⁹

1.2 Test capacity

In April 2020, the Prime Minister stated her intent to introduce rapid tests.¹⁰ The Minister of VSA is currently analyzing the possibility of introducing the so-called antigen rapid tests.¹¹ The intention is to use these rapid tests in addition to PCR testing to expand the test capacity to cope with the increase in 'community spread'.¹² The use of these tests at the air- and seaports is also being assessed. Starting on November 25th, the regulation for travelers was expanded to include antigen test results.¹³

A maximum of 256 PCR coronavirus tests can be administered daily on St. Maarten.¹⁴ At the time of writing this report, 700 PCR tests were available at the Sint Maarten Laboratory Services (SLS) and 400 at Health Care Laboratory (HCL).¹⁵



⁷ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

⁸ The percentage of positive cases is a critical indicator as it shows how the virus is spreading. A high positivity rate means that, likely, more testing is needed.

⁹ <https://graphics.reuters.com/world-coronavirus-tracker-and-maps/countries-and-territories/sint-maarten/> (Reference date November 22nd, 2020)

¹⁰ This was related to antibody tests. Refer to Chapter 2. <https://www.saba-news.com/jacobs-st-maarten-to-be-first-country-in-dutch-caribbean-to-conduct-rapid-tests/>

¹¹ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

¹² Press briefing of November 4th, 2020, Prime Minister.

¹³ De regulation for incoming passengers COVID-19 is expanded to include antigen tests, AB 2020, no. 51; certain antigen tests are approved.

¹⁴ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

¹⁵ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

2. COVID-19 TESTS

2.1 General

Three types of coronavirus tests are available: polymerase chain reaction (PCR)-, antigen- and antibody tests.¹⁶ PCR and antigen tests determine whether a person is actively (currently) infected. The antibody test determines whether a person was previously infected. Identification of active infections is important to manage the disease. A test must be reliable; sensitivity and specificity.

The higher the sensitivity, the better a test detects infected people. Test capacity (amount of testing) is also an important factor. Other essential aspects include logistics (specialized facilities and/or personnel, availability of test equipment, etc.), and costs. Finally, how quickly a test result is available, is crucial.

A quick result is important for maintaining social and economic activity. Consider the use of a rapid test before starting a day at work; a negative result means a person can proceed with their work. Faster test results are equally important for individuals' psychological health. After all, the longer one waits on results, the longer the fear of infection exists.

2.2. Comparison

PCR-test

A PCR-test starts with a nasal or throat swab taken by a health professional. [Click here for more information.](#) This test is considered the standard because of its high reliability (near 100% sensitivity and 100% specificity), but it is technically complex, resulting in higher costs. The turnaround time for results is between 24 hours and a few days. On St. Maarten, a PCR-test costs about ANG 126 guilders.¹⁷

Antigen test

Antigen tests search for certain proteins (antigens) of the coronavirus. If these are present, there is infection and infectiousness. [Click here for more information.](#) Antigen tests are less sensitive than PCR-tests,¹⁸ but a result is available within fifteen minutes and the tests are less expensive. In recent months, the Netherlands evaluated several rapid antigen tests. It is expected that the tests will be deployed for the first for education and healthcare workers in November.¹⁹ An antigen test is not expected to cost more than ANG 50.²⁰ The following antigen tests will be evaluated by the Dutch health ministry: Roche, Abbott, and BD.²¹ These antigen tests may be used by travelers arriving on St. Maarten effective November 25th, 2020. Arriving passengers must provide a negative result of a test taken within 48 hours before departure.²²

LAMP-test

The Loop mediAteD isotherMAal amPlication test developed by the Dutch TNO provides a very reliable result within 45-60 minutes, i.e. 99% (comparable to the PCR-test).²³ [Click here for more information.](#) Heathrow airport recently started using the LAMP-methodology.²⁴ The Dutch Minister of Health says that the TNO LAMP-test can be used immediately.²⁵

However, our Ministry of VSA has no plans to use this test on St. Maarten because of insufficient scientific evidence/validation currently available from the *Rijksinstituut voor Volksgezondheid en Milieu* (National Institute for Public Health and Environment - hereinafter: RIVM).

¹⁶ Antibody: is produced in the body to fight infection. Normally, the antibody test is not regularly used in the healthcare and is not part of this investigation.

¹⁷ ¹⁷ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

¹⁸ According to professor of medical microbiology Marc Bonte, antigen tests have a reliability of between 71.6% and 94.1% compared to regular PCR tests. Dutch magazine *Nederlands Tijdschrift voor Geneeskunde*.

¹⁹ <https://www.nu.nl/coronavirus/6084159/welke-sneltests-zijn-er-en-wanneer-kunnen-we-ze-gebruiken.html>

²⁰ <https://www.who.int/news/item/28-09-2020-global-partnership-to-make-available-120-million-affordable-quality-covid-19-rapid-tests-for-low--and-middle-income-countries>

²¹ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

²² AB 2020, no. 51, Regulation arriving passengers related to the period of proof of the RT-PCR SARS-CoV test.

²³ <https://www.tno.nl/nl/over-tno/nieuws/2020/10/praktijkproef-met-corona-sneltest-tno-succesvol/>

²⁴ <https://www.independent.co.uk/travel/news-and-advice/heathrow-airport-lamp-covid-test-terminal-5-london-airport-b1184417.html>

²⁵ <https://www.rtlnieuws.nl/nieuws/nederland/artikel/5190478/coronablaastest-woordt-volgende-maand-ingezet>

Breathalyzer test

A cotton swab is not needed for this test. A device evaluates exhaled air to detect the presence of (pieces of) coronavirus. Results are available in seconds. The reliability of the breathalyzer test is lower than other rapid tests; about 75% compared to PCR.²⁶ According to the Dutch government, the breathalyzer will be implemented in the Netherlands in November. [Click here for more information.](#)

The Ministry of the VSA currently has no plans to use this test on St. Maarten due to the lack of scientific evidence/validation from the RIVM.²⁷

Table 1 provides a comparison of the various coronavirus tests:

Table 1 Comparison of types of coronavirus tests

	RT-PCR	Antigen	Antibody	LAMP	Breathalyzer
Use	Active infection	Active infection	Immunity (previous infection)	Active infection	Active infection
Identifies	Virus RNA	Virus antigen	Virus antibody	Virus DNA	Free organic material
Sample	Nose/throat swab	Nose swab	Blood sample	Nose swab	Breath
Sensitivity	High	Moderate	Moderate-High	High	Moderate-High
Specificity	High	High	High	High	Moderate
Complexity	High	Low	Varies	Moderate	Low
Result time	60 mins-5 days	15 mins	10 min-3 days	45-60 mins	1 min
Cost per test	Moderate-High	Low	Moderate	Unknown	Unknown

²⁶ <https://www.nu.nl/coronavirus/6084159/welke-sneltests-zijn-er-en-wanneer-kunnen-we-ze-gebruiken.html>

²⁷ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

3. FINANCIAL INFORMATION

3.1 Budget

The Netherlands recently evaluated various rapid tests and found them to be reliable.²⁸ It is up to the local Government to determine whether to consider these rapid tests sufficiently reliable for use. The following questions, in our opinion, are worth considering:

- IS THERE A DIFFERENCE IN COSTS?
- WHAT IS THE PRACTICALITY AND FEASIBILITY OF IMPLEMENTATION; AND
- WILL THE USE OF RAPID TESTS INCREASE TESTING CAPACITY IN THE BENEFIT OF ECONOMIC RECOVERY?

The Government reserved an amount of ANG 460,000 from the disaster relief budget for coronavirus testing.²⁹ The costs for testing on St. Maarten are as follows: start of pandemic (March-April): ANG 170,000; 2nd wave (May-August): ANG 128,608. Of the total, ANG 460,000, more than ANG 160,000 remains available. An estimated 1,300 PCR-tests can be paid for with the remaining amount. Theoretically, a rapid test (hopefully) costing half of a PCR-test, could allow much more testing to occur.

3.2. Costs

The cost of a PCR-test is ANG 126 on St. Maarten.³⁰

A higher price is charged for a PCR-test (and paid by the traveler) at the airport because of the additional costs involved, according to the Ministry of VSA.³¹ The costs of rapid tests are not yet available for St. Maarten. There are no contracts (yet) between the Government and the Netherlands (Ministry of Health, Welfare and Sport - hereafter: VWS) for the purchase of rapid tests, according to the Minister of VSA. However, the CPS department maintains contact with both VWS and RIVM regarding the validation of rapid tests.³² We obtained an indication of the cost from public sources: the WHO quotes the cost of an antigen rapid test at \$5/each.³³

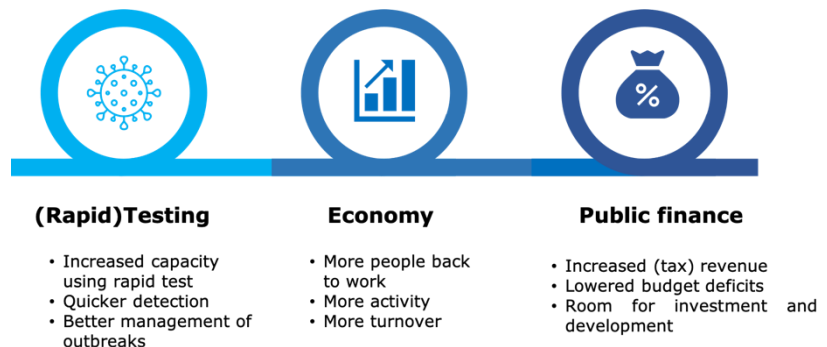
3.3. Analysis

The use of less expensive rapid tests makes the use of scarce public resources more efficient. A test that provides faster results is more beneficial to the economy and public health. A rapid test is cheaper than a PCR-test, reduces isolation periods, and speeds up the whole process.

The recovery of the main pillar of St. Maarten's economy, tourism, can be supported by a less restrictive testing process. Faster and more frequent community testing supports the continuation of socio-economic activities. For example, employees in the hospitality industry can take a rapid test before starting their work; a negative means they can get to work.

Management of the coronavirus on the island results in a safer environment for visitors. Implementing a rapid test system supports the economy; improved economic activity results in more turnover, more employment, and more revenue for the Government.

Additional revenue means more resources at Government's disposal for use in the further development of the country.



²⁸ <https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/testen/soorten-testen/ontwikkeling-van-sneltesten-op-corona>

²⁹ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

³⁰ Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

³¹ According to VSA, these include additional operations, overtime for lab personnel, percentage paid to the airport for use of test space.

³² Memo from Ministry VSA, DIV# 17893A, received on November 5th, 2020.

³³ <https://www.who.int/news/item/28-09-2020-global-partnership-to-make-available-120-million-affordable-quality-covid-19-rapid-tests-for-low--and-middle-income-countries>

4. FOCAL POINTS

The pandemic will likely last for a while more. The Government faces an enormously difficult task of maintaining the balance between the well-being (health) and the welfare (economy) of the country. St. Maarten is focused on testing travelers, patients, or persons identified through contact tracing. The current PCR testing capacity is limiting (economic) recovery. With reliable rapid tests, the country can scale up its test policy significantly.

The Government is working on an amended testing policy. In addition to the PCR test, the government intends to introduce rapid tests. Areas that require attention include:

1. **Additional testing can result in a return to (more) normal society.** The rapid test is less expensive, less complicated, and provides a faster result. Increased testing can mean faster detection of infected persons and better control of outbreaks. In so doing, immediate care can be provided faster. Moreover, a quicker test result is beneficial for the psychological well-being of all persons involved.
2. **Many hands make light work.** A rapid test is less complicated, and a laboratory is needed. Results are immediately available. Given CPS's limited capacity, the use of general practitioners for administering test is advisable. Doctors can issue statements of the test result. For example, a positive result of a rapid test can be confirmed with a PCR test via the CPS. Tracking of cases can be supported using digital technology (track and trace apps) to further lessen CPS's workload. After all, in our opinion it cannot and should not be the case that there is less testing because of a lack of track and trace capacity.
3. **More people can get back to work sooner,** depending on how the Government deploys rapid testing. For example, asymptomatic persons can be tested regularly.
4. **Tourism can return faster using a broader testing policy.** This can be done, for example, by regularly testing hospitality staff and visitors.
5. **Increased economic activity is beneficial for government revenues.** Additional income can help reduce budget deficits.
6. **Rapid testing is not a panacea.** There are also risks associated with the use of rapid tests. Regular testing can lead to a false sense of security. The point of departure remains maintaining safe distances, sneezing into your elbow, and wearing masks in public places at all times. It should be noted that not all rapid tests are equally reliable.
7. **There are different types of tests, where the cheaper and faster tests can be used on a larger scale.** The rapid test can be used as a surveillance instrument to break transmission chains and reduce community spread. A positive rapid test result can be confirmed using a PCR test.
8. **A policy should be established in advance of the availability of vaccines.** Consider who will be first to qualify for the vaccine, what is required to obtain group immunity, and the costs that are associated with the vaccine, transportation, and distribution. Reports indicate that other countries have already started their planning.³⁴
9. **Introduction of a rapid testing policy requires adequate information.** The benefits and limitations of these tests must be explained. For example, one should be aware that a single negative result from a rapid test is no guarantee that a person is free of the virus. The importance of social-distancing and wearing a mask must be continuously communicated.

³⁴ First coronavirus vaccines on Aruba will go to healthcare workers, the elderly and vulnerable groups, *Caribisch Netwerk*, November 9th, 2020. <https://caribischnetwerk.ntr.nl/2020/11/09/eerste-coronavaccins-op-aruba-gaan-naar-zorg-ouderen-en-kwetsbaren/>