St Helena's risk appetite with regards to COVID-19

COVID-19 Silver for Future and Economy

1. Introduction

An exercise was undertaken with silver leads (and bronzes) on 18 March 2021, the same exercise undertaken with elected members on 16 April 2021 and the same exercise undertaken with Health SMT on 23 April 2021.

The purpose of the exercise was to consider COVID-19 in the light of risk and risk reduction, to help plan our future moves and to give clarity.

In both exercises, the participants were asked to use their perceptions, knowing what they know, drawing in their influences, thoughts and feelings about risk, and choose a relevant mitigation option based on scenarios presented to them.

The scenarios were outlined in a decision tree based on:

- Whether the country of origin of the passenger was classified red, amber, green or gold based on the risk parameters used in the Statistics Office's reporting of country prevalence.
- Whether St Helena was 'herd immune' interpreted as having over 80% of its population vaccinated.
- Whether the arrival themselves had been vaccinated.

The undesirable result considered in the exercise was community spread (which will look different in a fully vaccinated population (affecting R number)). More specifically, the exercise considered the risk of someone, having arrived, where the virus had not been identified in that person, and that person joined the community with the potential to infect others. The exercise was simplistic as there are other parameters to consider, e.g. cost of each outcome and frequencies of events; for example the next step after this event would be how far the virus could spread, how much it could be contained and whether anyone would be seriously ill. But rather than set the objective at "no one die of the virus" (and therefore stating that in this exercise community spread could be acceptable as long as there were no fatalities), there is recognition that due to the Island wide panic that would be caused from community spread, the objective would be to reduce the risk of an infected person entering the community.

The group was informed that the highest known per passenger risk accepted by the Island, so far, was during January, where:

- the per passenger probability of be infected with COVID-19 at the time of travel was around 1%, based on UK prevalence at the time and
- the per passenger risk of COVID-19 going undetected and then that person entering the community (after mitigation measures) was 0.02%.

It was unsurprising due to the high prevalence in the UK at the time that a passenger planning on travelling was identified as having COVID-19, but the case did not evade the mitigation systems put in place. Equally, since then, whilst the UK has been

classified as ‘red’ as per our rating systems, it is unsurprising that COVID-19 cases are found, but it is unlikely that all of the measures can be evaded and an unidentified case makes its way into the community.

It was recognised for this exercise that although a risk of 0.02% was accepted in January, it would be unlikely that that would be the benchmark for risk acceptance as the feeling at the time was concern. Therefore, to be more cautious, the bench mark risk acceptance used in the exercise was half of January’s per passenger risk of undetected COVID-19 entering the community i.e. 0.01%.

2. Scenarios

The risk is calculated based on multiplying the following:

- Prevalence rate of country of origin (to represent probability that a passenger deriving from the general population of a country is infected with COVID-19)
- Risk reduction from measure 1 where relevant (e.g. probability of a test being accurate)
- Risk reduction from measure 2 where relevant (e.g. probability of infection not carrying on past the quarantine window)
- Etc.

In terms of the prevalence scenarios, these were defined for the exercise as follows:

Gold	No reported cases in last 14 days (COVID-19 free)
Green	Low. 14-day reported cumulative case prevalence higher than zero but less than the medium threshold.
Amber	Medium. 14-day reported cumulative case prevalence above the medium threshold but less than the high threshold
Red	High. All countries with 14-day reported cumulative case prevalence above the high threshold.

Thresholds are based on the following 14-day reported cumulative case prevalence rates:
Low: greater than 0.00%, but less than medium threshold
Medium: greater than 0.04% (1 in 2,500, or 40 per 100,000) but less than high threshold
High: greater than 0.10% (1 in 1,000, or 100 per 100,000).

The scenarios, taking in account prevalence, herd immunity, and vaccination status were as follows:

Red nH nV	Country of Origin Classified as Red, Less than 80% of St Helena Population vaccinated. Arrival not vaccinated.	Amber nH nV	Country of Origin Classified as Amber, Less than 80% of St Helena Population vaccinated. Arrival not vaccinated.
Red nH V	Country of Origin Classified as Red, Less than 80% of St Helena Population vaccinated. Arrival vaccinated.	Amber nH V	Country of Origin Classified as Amber, Less than 80% of St Helena Population

			vaccinated. Arrival vaccinated.
Red H nV	Country of Origin Classified as Red, More than 80% of St Helena Population vaccinated (Herd immune). Arrival not vaccinated.	Amber H nV	Country of Origin Classified as Amber, More than 80% of St Helena Population vaccinated (Herd immune). Arrival not vaccinated.
Red H V	Country of Origin Classified as Red, More than 80% of St Helena Population vaccinated (Herd immune). Arrival vaccinated.	Amber H V	Country of Origin Classified as Amber, More than 80% of St Helena Population vaccinated (Herd immune). Arrival vaccinated.
Green nH nV	Country of Origin Classified as Green, Less than 80% of St Helena Population vaccinated. Arrival not vaccinated.	Gold nH nV	Country of Origin Classified as Gold, Less than 80% of St Helena Population vaccinated. Arrival not vaccinated.
Green nH V	Country of Origin Classified as Green, Less than 80% of St Helena Population vaccinated. Arrival vaccinated.	Gold nH V	Country of Origin Classified as Gold, Less than 80% of St Helena Population vaccinated. Arrival vaccinated.
Green H nV	Country of Origin Classified as Green, More than 80% of St Helena Population vaccinated (Herd immune). Arrival not vaccinated.	Gold H nV	Country of Origin Classified as Gold, More than 80% of St Helena Population vaccinated (Herd immune). Arrival not vaccinated.
Green H V	Country of Origin Classified as Green, More than 80% of St Helena Population vaccinated (Herd immune). Arrival vaccinated.	Gold H V	Country of Origin Classified as Gold, More than 80% of St Helena Population vaccinated (Herd immune). Arrival vaccinated.

3. Rational response

A ‘rational player’ in this exercise would choose mitigation measures which result in a risk which is a) relatively stable over the scenarios (i.e. showing an almost flat horizontal line if shown graphically and b) averages between 0.01% and 0.02% risk. Where a player has a lower than 0.01% average risk, they would like to accept less risk than the risk the Island has already been accepting, i.e. they are risk adverse. Those who choose options which exceed the 0.02% risk would be willing to accept slightly more risk than what the Island has accepted so far.

The ‘robot’ in this exercise is a ‘rational player’. Based on accepting 0.01% risk, the robot would provide the following risk mitigation measures as rational responses to ensure St Helena is protected from community spread:

Scenario	Red nH nV	Red nH V	Red H nV	Red H V
	Red , no herd immunity arrival not vaccinated	Red , no herd immunity arrival vaccinated	Red , herd immunity arrival not vaccinated	Red , herd immunity arrival vaccinated
Mitigation Measure	Quarantine 14 days, test in advance, test on arrival, test at day 13	Quarantine 5 days, test in advance, test on arrival, test after day 5	Quarantine 7 days, test in advance, test on arrival, test after day 5-6	Test in advance, test on arrival, mask wearing and social distancing until test after day 14
Calculated risk (below 0.01%)	0.000%	0.01%	0.006%	0.006%

Scenario	amber nH nV	amber nH V	amber H nV	amber H V
	Amber , no herd immunity arrival not vaccinated	Amber , no herd immunity arrival vaccinated	Amber , herd immunity arrival not vaccinated	Amber , herd immunity arrival vaccinated
Mitigation Measure	Test in advance, test on arrival, mask wearing and social distancing until test after day 14	Test in advance, test on arrival, mask wearing and social distancing until test after day 3	Test in advance, test on arrival, mask wearing and social distancing until test after day 3	No test or quarantine requirements
Calculated risk (below 0.01%)	0.009%	0.006%	0.006%	0.007%

Scenario	Green nH nV	Green nH V	Green H nV	Green H V
	Green , no herd immunity arrival not vaccinated	Green , no herd immunity arrival vaccinated	Green , herd immunity arrival not vaccinated	Green , herd immunity arrival vaccinated
Mitigation Measure	Test in advance, test on arrival, mask wearing and social distancing until test after day 14	Test in advance or arrival	Test in advance, test on arrival, mask wearing and social distancing until test after day 3	No test or quarantine requirements
Calculated risk (below 0.01%)	0.006%	0.01%	0.007%	0.005%

Scenario	Gold nH nV	Gold nH V	Gold H nV	Gold H V
	Gold , no herd immunity arrival not vaccinated	Gold , no herd immunity arrival vaccinated	Gold , herd immunity arrival not vaccinated	Gold , herd immunity arrival vaccinated
Mitigation Measure	No test or quarantine requirements	No test or quarantine requirements	No test or quarantine requirements	No test or quarantine requirements
Calculated risk (below 0.01%)	0.00%	0.00%	0.00%	0.00%

4. <u>Exercise Results</u>

The exercise tested the 'players' perceptions as they were asked to use their hearts and minds, drawing from what they thought to be true to provide mitigation options.

The reason for the variance between the answers provided by the 'player' and the rational response is due to:

- Any information known outside of the scenario such as ability of the healthcare directorate to cope with a case.
- Mistrust of the information, for example disbelief for the effectiveness of the vaccine, or validity of the prevalence statistics.

- Self-interest, such as one's own health, the health of one's friends or family and their ability to cope with COVID-19, and one's standing in the public should COVID-19 become prevalent, and one's own personal aims with regards to travel.
- View on the cost of COVID-19 should the worst happen. Whether even a small risk of avoidable death is too much risk to bear.
- Personal responsibility such as being responsible for a budget which is impacted by COVID-19, an income stream related to tourism, or being answerable to a manager, organisation or public who have certain expectations.

a. Silver (and Bronze) leads

There was discussion with the silver leads (and bronzes) as follows:

- the cost of community transmission (worst case scenario, death) could be considered large in an unvaccinated population or for those who are unvaccinated and vulnerable
- There was differentiation in responses based on red – amber – green – gold rating of the country of origin of passenger.
- There was bigger differentiation in responses based on the uptake of vaccination on St Helena.
- There was a clear distinction on how we should treat those vaccinated compared to those not vaccinated, since the risk of bringing in COVID-19 was different.
- Participants recognised some were more risk adverse than others. And accepted that an average assessment would be useful, particularly to reflect community risk.

Silver (and bronze) commands were willing to take on average a risk of 0.006%, which was still more risk adverse than the exercise benchmark of 0.01%-0.02%, but meant that changes in measures could be considered now largely based on over 80% of the population having had their second dose of the Astra-Zeneca vaccine. The extent of the proposed measures would depend on predominately whether the arrival themselves had been vaccinated and secondly the prevalence in the country of origin.

b. Elected Members

The elected members undertaking the exercise in April 2021 were more risk adverse than other groups, pointing to a potential will to protect the Island from any risk altogether.

In the discussion on the objectives with elected members, concern was raised that the Health Directorate might not be able to cope with cases; that despite the extra resource made available for COVID-19 health staff, these staff were temporary (and therefore there was turnover which meant risk of gaps in service) and any staff taken away from core work to deal with COVID-19 was affecting the general health of St Helena's citizens. Therefore, although the exercise had community transmission at

the core of it's objectives, it was noted by some members, there was a concern of any case coming within St Helena's borders at all. For members who felt this way, they decided to attribute the highest level of mitigate measures, particularly for when the prevalence in the country of origin was amber or red.

Some elected members mentioned that economic impacts would need to be taken in account, however only very few actually took these in account in their answers. Those that did chose to change the measure to 7 or 10 day quarantine with 3 tests (in advance, on arrival and at the end of quarantine) for circumstances where:

- The country of origin was amber, the St Helena population was vaccinated and the arrival was vaccinated.
- The country of origin was green, the St Helena population was vaccinated.

They also chose to change the measure to 5 day quarantine with 3 tests (in advance, on arrival and at the end of quarantine) for circumstances where:

- The country of origin was green, the St Helena population was vaccinated and the arrival was vaccinated.

However, only 3 members supported any deviation from 14 day quarantine at all (except when the country was Gold), therefore showing a majority willingness for no change until the pandemic had ended.

Where the country of origin was Gold all members relaxed the 14 day requirement, but to different extents.

Specific comments from elected members, when asked to explain why they thought the 14 day quarantine and 3 test regime was reasonable for the majority of scenarios they shared the following views:

- St Helena currently has no oxygen plant. If we have more than 2 people requiring high flow oxygen, it is believed that St Helena will be in breach of its constitution i.e. right to life.
- Staffing considerations are important should a case come to St Helena.
- Red categorisation that St Helena uses should also be in line with the UK red list because the UK list takes in account wider factors such as variants.
- The grouping of passengers was a concern. It was noted that 14 passengers on one ship (who could spread to each other) was more of a risk than for example 7 yachts with 2 passengers. That this should be taken in account when measures were considered.
- There was scepticism about the accuracy of the statistics.
- It was thought that it was too early at this stage to take any risks regarding reducing from 14 day quarantine until we have more reliable data on the vaccine.
- It is believed the key focus must remain on prevention, not containment.
- The risk levels should apply to all arrivals, not just those flying in.
- That spread on the Island would have catastrophic consequences from all perspectives. That some economic pain in order to fully minimise the risk is

inevitable, but that is a much lower price to pay. A ‘lockdown’ situation would almost paralyse the Island and have prolonged negative impacts, even if few fatalities arose.

- Members believed we should be fluid and able to change where necessary.
- We need to know more if someone that is not vaccinated can transfer to someone vaccinated and vice versa.
- One elected member said that although 80%+ of our population has received the vaccine there are still a lot of unknowns at this moment and time and the pandemic is like a moving vehicle without a direction of travel. Until more information is made about the pandemic and the length of time a vaccine can keep the pandemic at bay we should continue as is. Within a 3 month period after more results and statistics are available we should tread with caution.
- One elected member believed that vaccinations were irrelevant because they were unsuccessful against variants.
- One elected member said there were so many unknowns so there was a need to be cautious.
- One elected member said change will depend on other country vaccination.

c. Health Senior Management Team (SMT)

Because elected member’s reasoning behind their choices were mostly health related, it was prudent to consult with Health to understand their view on risk, considering issues such as their team’s availability to deal with incidents, their understanding of the effectiveness of the vaccine, and the dangers of the variants etc.

The discussion with the Health SMT were as follows:

- They noted that the vaccine was effective in reducing the severity of the symptoms should someone get COVID-19.
- Their responses took in account uncertainties to do with the variants, and the effectiveness of the vaccine.
- They thought it was very unlikely that the oxygenation machine would ever be used by a local on the back of community spread.
- They noted that the decision tree was useful, and should vaccines prove to be ineffective relative to a certain variant, then one could easily switch over the mitigation response to the preferred option under the ‘no herd immunity’ scenario.
- Some liked a 10 day quarantine option as a medium measure between 7 days and 14 days.
- However, it was noted that all cases so far were identified within 2 days of arrival, and therefore the longer quarantine has had its uses, but the measures up front (testing in advance, testing on arrival) have been effective so far in identifying cases.
- They noted that whilst elsewhere use masks and social distancing, it would not be a preferred measure for St Helena, whereby most of the community was not used to it.

- It was noted that those who had lived / worked / travelled abroad during the pandemic were a bit more relaxed and confident in measures such as tests as opposed to quarantine.
- They noted that the red/amber/green/gold classification should be based on the highest risk country a person had travelled to in the last 14 days and the measure take in account whether vaccine resistant variants had been identified in that country.
- The variants need to be tracked – if it turns out that a variant is not mitigated by the Astra-Zenica vaccine, then the Island would not be at Herd Immunity. Tracking research is important.
- The group said they would also agree to support the most reduced quarantine period for key personnel.
- There needs to be a focus on education and comms to decision makers to help them choose new measures.
- Appropriate staffing needs to be continued e.g. COVID nurses.
- They acknowledged that people in decision making positions may be worried about taking a lead on changing the quarantine process to relax it when the country of origin has low prevalence, in case something goes wrong (worst case –deaths) and the community could personally blame those decision makers, which will become hard to deal with in a small community.
- However, they also noted that should the next tourism peak season have no flexibility on the 14 day quarantine, the job losses and business shut downs which will be caused would have a less direct line of responsibility back to the Health Department, or even elected members, therefore there is less incentive to open up and more incentive to keep closed.

Health SMT were willing to take on average a risk of 0.008%, which was still more risk adverse than the exercise benchmark of 0.01%-0.02%, but meant that changes in measures could be considered now. The extent of the proposed measures would depend on predominately whether the arrival themselves had been vaccinated and secondly the prevalence in the country of origin.

5. <u>Conclusion and recommendations</u>

Whilst IEG have already agreed for arrivals to enter subject to three tests and a quarantine period, other than arrivals from Ascension whilst it is COVID-19 free, who will require 1 negative test before entry, there is currently little appetite by elected members to plan to move from this situation under most future scenarios presented to them.

Silver leads, however, had an average risk appetite of 0.006%, and believed that community vaccination is enough to re-review the measures at this time. That differentiated measures could exist for vaccinated and non-vaccinated people arriving.

The Health SMT had an average risk appetite of 0.0081% and believed that the international risk (e.g. movement from red to amber to green) as well as community vaccination was enough to re-review the measures at this time. However there was

more study to look at regarding vaccinations, and continued investment in COVID nurses were required to ensure safety.

The risk appetite statistics across the groups were as follows:

Group	Max	Min	Average / Weighted average	Number
Silvers	0.0403%	0.0000%	0.0063%	6
Elected Members	0.0015%	0.0000%	0.0001%	9
Health SMT	0.1107%	0.0000%	0.0081%	9
ALL	**0.1107%**	**0.0000%**	**0.005%**	**24**

Going forward, SHG could use a risk appetite of 0.005% per passenger to design it's risk measures, based upon flights being relatively infrequent (less than once a week). Appendix B shows recommended measures based upon a risk appetite of 0.005% per passenger. This should be applied as a proposal to IEG.

The proposal would be as Figure 1, dependent on the population having been vaccinated to over 80%. This reflects the risk being at or lower than 0.005% per person, whilst avoiding mitigation measures which rely on mask wearing and social distancing.

Should the vaccine prove to not be effective against the majority strain presented in the country of origin, then the proposal would be as per Figure 2.

The key points relating to the change in current policy are:

When the UK/South Africa prevalence is not red:

- A person who has been **vaccinated** should be allowed to quarantine for **3 days** with a test in advance, on arrival and after day 2[1].

When the UK/South Africa prevalence is Amber:

- The quarantine required for a **non-vaccinated person** should be **5 or 7 days**, with a test in advance, on arrival and on final day[2].

When the UK/South Africa prevalence is Green:

- The quarantine required for a **non-vaccinated person** should be **3 or 5 days**, with a test in advance, on arrival and on final day[3].

[1] When the highest risk country that a person has travelled through in the last 14 days is amber
[2] When the highest risk country that a person has travelled through in the last 14 days is amber
[3] When the highest risk country that a person has travelled through in the last 14 days is green

*Figure 1: Recommended measures based on an average risk appetite of 0.005% and **St Helena having herd immunity**, and a vaccine effective against the majority strain presented in the country of origin.*

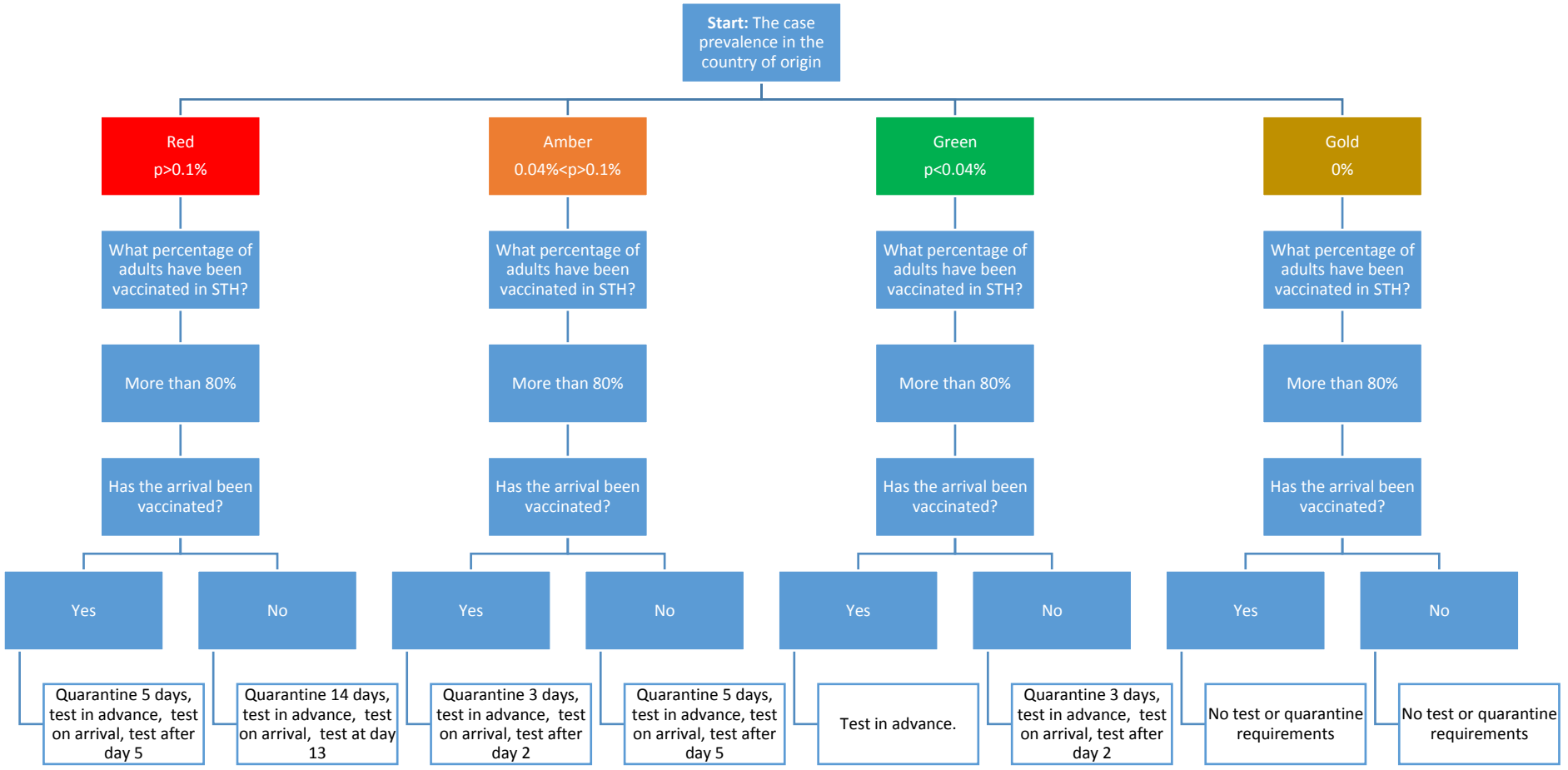
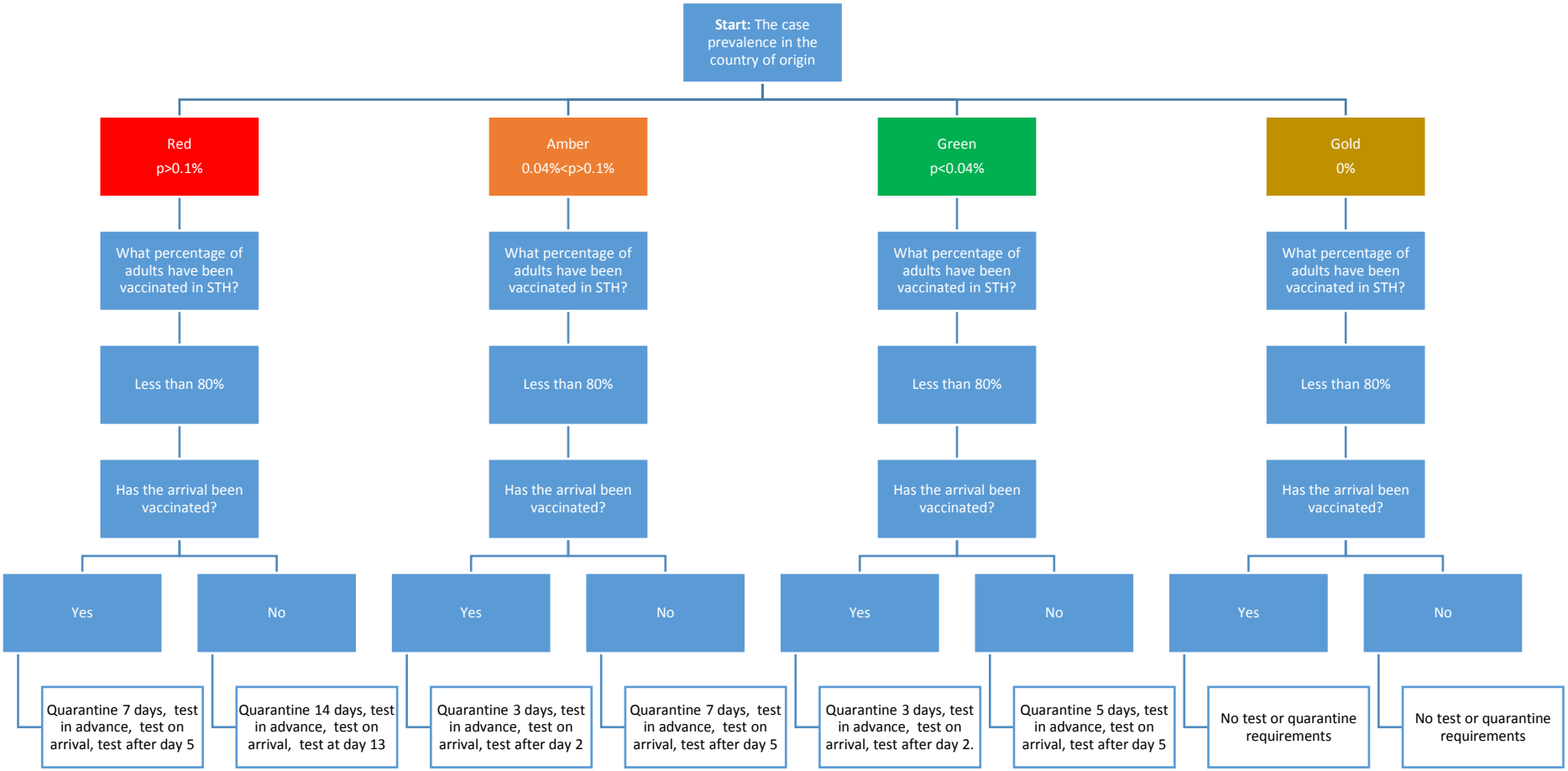


*Figure 2: Recommended measures based on an average risk appetite of 0.005% and **St Helena not having herd immunity** against the majority strain presented in the country of origin.*



It should be explained to the public that it is not a given that when efficacy of the mitigation measures goes down, the risk to St Helena goes up. Rather, as the prevalence within a country of origin goes down, the measures can be more relaxed in order for St Helena to manage the same level of risk.

In the medium term future, the Island will require more information on the following to give comfort to make decisions as outlined in this paper. These actions should be allocated to the silvers to work on as next steps.

1. The ability of the Health and Social Care directorate to maintain normal services for the public whilst managing COVID-19 (during containment i.e. whilst in quarantine, and then in an unlikely event should an outbreak occur). This could be achieved through a report from the Health Silver Command.
2. The ability for someone who has been vaccinated to be infected with COVID-19 and to infect others with COVID-19. Initial work has been released by the CDC on this, but we are awaiting more peer reviewed evidence to confirm how much the vaccination reduces risk. A 'myth buster' communication piece would be beneficial to explain the evidence to the public.
3. How vaccinations (particularly Astra-Zeneca) work relative to the various variants. A 'myth buster' communication piece would be beneficial to explain the evidence to the public.
4. The availability of an oxygen plant for serious cases, in the unlikely event it is needed.
5. The impact to the economy by disincentivising tourists to visit during the 2021-2022 peak season.

However, even if all this information is provided, it is still unlikely that elected members will feel comfortable to relax the entry requirements to a large extent, as there is a 'better safe than sorry' sentiment. The output of this, however, will be another tourism peak season (2021-22) with significantly lower than usual numbers. This could contribute to businesses closing down, therefore IEG should push ahead with recommendations despite the concerns. The likely reasons that decision makers will not want to deviate from the 14 day quarantine policy in all scenarios is to avoid being blamed should there be a community spread.

SHG can also consider trying to attract tourists who would consider quarantining. The only tourists of the type are probably those who could work remotely and visit for a longer period, and/or those who are retired, or travelling the world (on yachts or otherwise) as would see St Helena as a safe haven.

Until then, unless the elected members change their minds, and decide to use an evidence based approach, for example, the Island will stay relatively closed until most of the world recovers from the pandemic.

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28 April 2021

Appendix A: Measures introduced by other BOTs as of April 2021

Barbados: will introduce 24 hours quarantine and testing for holiday makers who have been fully vaccinated. Barbados has announced that from 8 May fully vaccinated travellers will, in most cases, not have to quarantine[4].

British Virgin Islands: From 15 May 2021, fully vaccinated persons arriving in BVI with a PCR test within 5 days of travel will be subject to a PCR test on arrival and then released from quarantine once a negative test result is received. That will mean a quarantine period of only 24-36 hours for fully vaccinated persons.

Cayman Islands: quarantine to be reduced to 10 days for vaccinated travellers

TCI: anyone arriving to the Turks and Caicos Islands is required to obtain pre-travel authorisation via the Turks and Caicos Islands Assured Portal, this requires evidence of a negative COVID-19 test from a reputable facility taken less than five days prior to arrival, proof of health/travel insurance with COVID-19 cover and a completed health screening questionnaire

Bermuda: visitors need to receive a negative COVID-19 PCR test no more than 5 days before travel. Anyone arriving in Bermuda from the UK, or who has travelled through the UK within the 14 days prior to their arrival in Bermuda, must quarantine for 4 days upon arrival. They will need to receive a negative COVID-19 PCR test on or after the 4th day to leave quarantine.

Anguilla:

- ***From 12 April*** the quarantine period for persons with evidence of full COVID- 19 vaccination with final dose administered at least three weeks (21 days) before arrival date will be reduced to 7 days. Persons will still be required to submit a test 3-5 days before arrival date, tested on arrival and at the end of the quarantine period. Multi-generational families and/or groups with a mix of unvaccinated and vaccinated persons will all have to quarantine for a 10-day period utilizing only approved short stay services.
- ***From 1 July*****:** persons entering will be required to produce a negative test 3-5 days before entry and:
    - fully vaccinated persons will not be tested upon arrival or required to quarantine
    - Unvaccinated returning residents will be required to:
        - Produce a negative COVID-19 test 3-5 days prior to arrival
        - COVID-19 test on arrival
        - Quarantine for 10 days in approved accommodation

Montserrat:

(i) Montserrat requires negative PCR tests within five days of arrival and then self-isolation for 14 days. This regime is expected to change when our open PCR test equipment is launched in mid-May. The plan is then still to require a negative PCR test but to do a test on arrival for vaccinated passengers and then at five days and release if both tests are negative.

(ii) Montserrat has procured digital locator bracelets which should be dispensed to arriving passengers from 6 May; and the locator signals will be monitored by a new monitoring unit who will inform the police if anyone in self-isolation leaves their designated accommodation.

[4] https://issuu.com/visitbarbados/docs/btmi_travel_protocols_final_2021?fr=sMjE1NzI5MjYzNDk