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Contents lists available at ScienceDirect

Health policy

journal homepage: www.elsevier.com/locate/healthpol

Managing COVID-19 in four small countries: Initial response to the pandemic in San Marino, Montenegro, Malta and Cyprus

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ARTICLE INFO

Article history:

Received 4 November 2020

Revised 12 August 2021

Accepted 16 January 2022

ABSTRACT

The aim of this paper is to compare the impact of the COVID-19 pandemic on four small countries in the southern half of Europe with similar public health systems: San Marino, Montenegro, Malta and Cyprus, the latter two being island states. There are advantages and disadvantages in being a small nation amidst this crisis. The centralized public health administration means that small countries are faster at adapting as they learn and evolve on a weekly basis. However, small countries tend to be dependent on their bigger neighbours, and the networks they belong to, for trade, food, medical supplies as well as policies. The risk threshold taken by a small country for the transition strategy has to be less than that taken by a bigger country because if things go wrong in a border region, there is less resilience in a small country, with immediate impact on the whole country. The blow to the tourism industry, which plays a main role especially in small countries, negatively impacted the economy, and it has been a feat to reach a balance between allowing the flow of inbound tourists and keeping the local infection rates under control.

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1. Introduction

The COVID-19 pandemic has posed a difficult challenge for national public health systems, especially in small countries. These had to hit the ground running in order to evolve and fine tune themselves in a continuous and highly responsive manner as the challenges increased. Given the adaptive capability of small state public health systems, small countries have been quicker at adapting and responding to the pandemic [1,2]. However, opening up the borders could also happen faster, leading to a worse second wave of infection [3]. The experience of four small countries, namely Malta, San Marino, Montenegro and Cyprus, located in the southern half of Europe and with similar public health systems, is discussed in detail.

Abbreviations: Small Countries Health Information Network, SCHIN; Reproduction factor, R_T .

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These four European countries share a number of characteristics. Each have a population of under 1 million people. They all form part of the WHO High Level Network for Small Countries [4]. Malta and Cyprus are both island nations, while San Marino and Montenegro are continental. San Marino is completely landlocked and can be considered as a microstate because it has a population of under 100,000. Montenegro is partly contiguous with land, but also bordering with the Adriatic sea.

2. Material and methods

Four senior public health physicians who are individually the main representatives for their respective country (Malta, Cyprus, San Marino and Montenegro) within the WHO High Level Network for Small Countries, were contacted by email during June to September 2020. The approach of gathering the data was through the personal ongoing first hand experience of these four senior public health physicians from each individual state, who were asked to send in their comments on a number of set themes. These themes included: border control, health systems, role of the government, impact on the local economy (especially tourism), the control of the reproduction factor (R_T), collaboration between countries, information, and vaccination.

3. Results

Overall, small states respond quickly, presumably because of a small political elite. Also, societies may be less susceptible to infodemics in small countries, as it may be possible to trace the misinformation at source. However, capacity constraints are significant and hard to alter due to the small market size, relations with the bigger states and sometimes, insularity. Tourism dependence makes it hard to sustain public health measures, and while bigger countries like France and Italy also have huge tourism sectors, these also have economies that are big and diverse enough to survive tourism stoppages for a longer period of time. These findings are further discussed in detail in the discussion below.

4. Discussion

4.1. Border control and health systems

Malta and Cyprus had an advantage in the COVID-19 fight, because, being islands, control of borders was easier due to fewer ports of entry. Malta and Cyprus both closed their frontiers in March 2020, within a few days of having registered the first cases of COVID-19 in their country. In the case of Malta, both the airport and the port were closed, except for cargo. In the case of Cyprus, even the border with Northern Cyprus was closed [5–7].

The islands' size could have also contributed to the health systems being quicker in their response. Malta has a population of just under 494,000 mostly residing on the mainland, and has a total area of 246 square kilometres [8]. In Malta, being such a small nation with a free public healthcare service, it was easier for people to reach the health services to get tested and treated [9,10]. Infact, Malta had one of the higher testing rates, together with Cyprus and other small countries such as Andorra and Luxembourg [11].

However, it needs to be appreciated that small countries have limited public health resources and once the caseload exceeds the capacity of the case management and the contact tracing system, this is likely to result in even higher numbers. Thus, there is a higher risk of having to move from a containment phase to a mitigation phase. At this point, overwhelming of hospital capacity is expected [12].

4.2. Role of the government and impact on the local economy

In small countries such as Malta, Cyprus and San Marino, the healthcare system is centralised, and it is not an independent institution. This means that, in small countries like these, healthcare constitutes a major portion of the annual recurrent government expenditure. Even in those small countries with independent public health institutes operating the COVID-19 response, such as Montenegro, these are still largely reliant on government funding [13]. Given this situation, there was a limitation regarding the ability of public health authorities in small countries to communicate directly and independently with the public, without consulting with central government. This typically led to attenuation of public health messages to match the political narrative of the ruling party [14].

Other sectors in the economy which are dependent on neighbouring countries and tourism from further afield, have been putting pressure from their end on the same centralised government in these small countries. Players and stakeholders in the tourism industry were faced with clear knowledge of a restricted tourism market in summer (2020) compared to previous years. Other countries, especially small countries, were more aggressive than usual in the tourism market [15]. There have been reported cases of small countries declaring themselves as COVID-

free without waiting the requisite 21 days of not having any positive cases, as part of their tourism marketing [16]. Actually, there was also suppression of COVID-related services including testing for a period of time, in order to market themselves as a safe destination, despite not fitting the international agreed epidemiological criteria yet of really being free from disease [16,17].

Given the massive contribution to the annual gross domestic product that the tourism sector has, particularly in small countries, and the fact that this income is indeed needed to sustain the national healthcare system, amongst other public services, in that same small country, a number of governments gave in, to varying extents, to the pressure from internal governmental staff and the public in general in order to sustain employment. In some cases, public health advice was generally well heeded and a high level of testing was maintained together with surveillance to a high degree in airports, or incoming travellers, particularly in the small island states. However, in other small countries, governments opted to have less or no surveillance at all, against the advice of their own public health authorities [16]. And although the number of new cases was seemingly low, the positivity rates were not [11].

Governments in small countries such as Malta, Cyprus, Montenegro and San Marino were quick to implement several emergency measures in the labour market to contain the spread of the virus, supporting workers and their families, with the need to move to teleworking, offering social benefits and other economic measures [18–22]. The Republic of San Marino was one of the first European countries to adopt labour law restrictions and lockdown measures on the 8th March 2020, primarily because of its geographical position, being a landlocked enclave surrounded by the north of Italy [18]. The surrounding region of Emilia Romagna was one of the earliest amongst the badly affected regions in Europe. Similar measures were taken by the governments of Montenegro [19] and other small countries.

Due to the fact that they are fast at adapting, small countries, including Malta, Montenegro, San Marino and Cyprus, similar to other small states in other regions, were among the first to achieve low COVID-19 positivity rates by the beginning of summer 2020 and were well on track to become COVID-free [23,24]. However, these small countries were not just yet COVID-free [17]. At the same time, testing at airports was avoided as tourism authorities were scared that tourists would opt for non-testing destinations instead. The lack of agreement within the tourism industry to implement a universal requirement for a negative test before travelling at the time meant that few countries actually implemented it. Some small countries, who were close to being COVID-free, removed all restrictions for incoming travellers, against the advice of all public health bodies insisting on high surveillance at point of entry to maintain a COVID-free status. One needs to acknowledge that airports with a high volume of arrivals relative to the size of the surrounding population are more at risk of contributing to spread within the local population [25].

Different governments, when faced with conflicting requests from their own ministries dealing with tourism industry and public health, reacted differently. Some opted to introduce some testing, or nothing at all. Those countries, like Cyprus, who did introduce testing, were penalised by the international tourism industry through flight cancellations, especially the low cost carriers from the British travel market [26].

However, in some other countries where no restrictions were being implemented or enforced, these were accompanied by de-escalation of other measures intended to control the spread of COVID-19, in addition to the organisation of mass events. The combination of unrestricted travel and the organisation of mass events

provided a fertile environment for these ‘seedling’ imported cases to start new outbreaks which spread very quickly. Malta is one case in point [27]. This led to a lot of tension between the tourism economy and the public health situation for small states in confronting COVID-19.

4.3. The reproduction factor (R_T)

Towards the end of June 2020, the R_T in Malta was low and the decision was made in agreement with the public health authorities to open up to tourism on the 1st of July to a limited number of countries. However, just two weeks later, the list of countries from where incoming tourists could travel without restrictions or requirement for testing, was extended, against public health advice. As expected by the third week of July, Malta experienced a growth in its R_T in the region of 3.5 [15]. This rapid growth was alarmingly close to that observed following major mass events in other parts of Europe towards the end of February, such as the football matches between Atalanta vs Valencia in Bergamo, Italy, and Liverpool vs Atletico Madrid in Liverpool, UK, and the Carnival celebrations in Gangelt in Germany, which led to an R_T of around 4.5 in these regions. This is twice as high as the natural R_T of the COVID-19 pandemic which is estimated to be around 2.2 [28]. Due to the responsiveness of the healthcare system, this was quickly addressed and major mass events were immediately banned within a couple of weeks of starting. R_T responded rapidly with a drop to below 2.0 by the first week of August. Eventually Malta also introduced an amber list which included a number of countries from which incoming travellers were required to have a negative test, a step which Cyprus implemented earlier in the season [29,30]. Although Malta reacted fairly swiftly in controlling and banning all mass events, and the rate of spread decreased consistently over the next month or so, this spike in R_T led to the same tourism industry boycotting Malta. This was following a number of cases being exported from Malta, leading many of the countries which are major players in the tourism industry to impose quarantine on travellers returning from Malta, thus prematurely strangling the summer tourism season industry in Malta. This is a clear example of how economy without health is destined to collapse.

Unlike in the case of Malta, Cyprus did impose clear consistent restrictions throughout the summer, and did manage to keep low infection rates, however at the cost of suffering from a severe drop in the tourism industry. Malta also experienced substantial cancellations following the spikes in case numbers in July 2020 [31]. Assuming that the two economies are equally heavily dependent on tourism, if economic shrinkage had to be taken as an indicator, the Cypriot GDP shrank by 5.1% compared to Malta's GDP which shrank by 7%, according to the International Monetary Fund [32].

4.4. Collaboration between countries

Thanks to the pre-existing well-established formal collaborations through international bodies such as the Small Countries Health Information Network (SCHIN) [33], public health professionals could informally start sharing experiences. This helped to share expertise on criteria to be implemented such as for opening up borders, carrying out sero-epidemiological surveys, guidances for how to mitigate risks in various sectors, and also for forming lobbies at a European level. The main advantage of small countries is that every professional in such small states has to sit on more international fora than their counterpart in a large country [34]. This indeed gave an edge to public health professionals in smaller countries when seeking information on certain issues related to

the management of the pandemic as their individual network of contacts is large.

Small countries tend to be dependent on their bigger neighbours, and the networks they belong to, for trade, food, medical supplies as well as policies [35,36]. This proved to be a challenge from the very start of the pandemic way back in February 2020, particularly in the decision for border closure. Hostile environments including organized crime and fake or low quality products flooding the market, made it very difficult for small countries to get adequate supplies of good enough quality. Due to the restriction on exports from the larger European countries [37] who gave priority to their own internal interests and could not commit to keep up with the longstanding trade agreements, small countries had to seek new partners from further afield as the neighbours who were the normal supply chain, were initially hesitant to share [38]. This was complicated by the fact that medical supplies were still being developed, which, in a situation where small countries had to start buying from further afield from suppliers that they were not used to, meant that these same small countries had limited capacity to carry out certain validation. A case in point, which affected most European countries (big or small) was the purchase of face masks designed for the Asian market, not fitting well on European faces [39].

Typically small countries present a small market in the international arena, and this makes it more difficult to access supplies, as they are not considered as profitable to suppliers. However, in this pandemic, the small markets helped in the diplomatic negotiations with larger countries. Diplomatic missions between small countries and countries who were not in the usual supply chain, helped to facilitate the delivery of these supplies, despite the export bans implemented domestically. So, diplomats in foreign countries helped by establishing successful contacts between local suppliers and the governments of small countries [40,41]. However, the risk did remain that, given that procurement officers in ministries were interacting with previously unknown suppliers, the urgency to buy was limiting the due diligence that is implemented in normal circumstances. Even after having secured a deal with a trustworthy supplier, the route from these suppliers within, or more likely outside of, Europe, was not safe, particularly because it inevitably involved a number of transit stops, in order to reach a small country. Therefore, there were many reports of theft of supplies in transit stops, with the risk increasing the higher the number of transit stops [42]. This was further exacerbated by the fact that most airline networks were disrupted, therefore increasing the number of transit stops. So, some small countries, given the actual small market, resorted to getting direct charter cargo flights to secure the passage of the purchased goods directly from the supplier to the country.

Small countries normally depend a lot on the advice given by the international organisations, which is normally based on evaluations and evidence generated in bigger countries who have more capacity. Nonetheless, this advice was not forthcoming in the first months of the pandemic. Therefore, public health officials had to resort to their own contacts abroad and outside of Europe [43,44]. The World Health Organisation was instrumental in facilitating these contacts with Asian counterparts, as these were typically outside the normal networks of local public health authorities. With the rapid development of new products, such as rapid testing kits, larger countries were more hesitant in sharing validation data. This is evidenced by the explicit call by the Council of the European Commission to share validation data on COVID-19 tests [45]. As a result, international organisations were rather delayed in delivering the required advice, so smaller countries had to, at times, develop certain capacity in-house to carry out validations before making investments which would bear heavily on their health budgets.

4.5. The infodemic

The phenomenon of the infodemic also reached small countries. However, in small countries, as in the case of Malta, Montenegro, San Marino and Cyprus, the more popular social media channels with large memberships are typically easy to identify. Focussing solely on the activity in each of these highly followed channels together with local news outlets, if monitored appropriately, misinformation could be kept in check with relative ease. Commenting respectfully on any misinformation or disinformation posts in these groups with concise correct information supported by references tends to limit the spread of such posts. Typically, if the already limited number of social media channels are monitored and the right information is passed on in response, it is interesting to see that after a certain amount of time, some followers of social media would start to identify which are the right sources of information to follow, and they themselves ‘inoculate’ the right information in response to posts spreading misinformation on the subject [46,47].

These groups, together with official government health social media channels, are also pivotal to the dissemination of the correct information. Infodemiology is a science which is still being developed. It is the study of the spread of misinformation and how to manage it [47]. Artificial intelligence driven social media listening tools can also be very helpful to help to identify what social media users are discussing currently [48]. Small countries are the ideal labs where to develop this new science, and the particular situation posed by the COVID-19 pandemic was an interesting experiment. Being agile and having an excellent knowledge of the dynamics of globalization, “countries with small populations have a social and cultural cohesion that makes it easier to design and test innovative policies that can be adapted by larger and more complex countries,” as stated by the WHO Regional Director for Europe, Zsuzsanna Jakab, in her keynote speech to the Second High Level Meeting for Small States in Europe 2015 in Andorra [49].

4.6. Vaccination

By Autumn 2020, the world was eagerly anticipating the marketing of COVID-19 vaccines. A handful of candidates had advanced a lot in the research awaiting authorization at the end of 2020 [50]. By spring 2020, the EU had already started negotiating advance purchase agreements for its members with the manufacturers of more promising COVID vaccine candidates. The COVAX collaboration spearheaded by WHO and the Global Alliance for Vaccines and Immunisation (GAVI) facilitated access to vaccines even for the less vociferous smaller countries and low and middle income countries [51].

In the meantime, a bigger investment was made in flu vaccination, to avoid flooding the already precarious health systems. Flattening the curve is the primary goal to avoid overburdening centralised healthcare systems, because it is a fact that those who cannot be admitted to intensive care units, or who have no access to a ventilator, are more likely to die [52]. In fact, the four case studies invested in the procurement of more seasonal influenza vaccine doses than usual, in line with investments made by other countries, large and small, with vaccination targets up to twice the normal uptake [53,54].

Small advanced economies like in Malta, are highly resilient [55] and it is precisely because of this that countries like Malta could enact the largest financial recovery package in the world in April 2020 to mitigate the adverse effects of lockdown. Moreover, having a diversified economy meant that Malta did not go into a full lockdown as some sectors of the economy remained buoyant (manufacturing, gaming etc.). However, in order

to be able to maintain this delicate balance, it was imperative that preventive measures were taken to support the health of the nation, and this included the promotion of flu vaccination while eagerly awaiting the introduction of COVID vaccines on the market.

Towards the end of 2020, COVID vaccines reached the market, the first COVID vaccines were given emergency use license and several countries started widespread vaccination campaigns. The EU countries were quick to start vaccinating, and amongst these, Malta stood out with one of the fastest vaccine deployment rates in the territory [56]. Whilst not vaccinating at the same rate as Malta, Cyprus has been steadily advancing in its vaccination campaign. San Marino and Montenegro, not being part of the EU, did not have early access to vaccines. San Marino negotiated directly with Russia to gain access to the vaccine, and vaccination started steadily picking up at a very fast rate in February 2021 once vaccination was supplied [57]. Montenegro got its first vaccines in March 2021 thanks to the COVAX initiative [58]. By Spring 2021, it became pretty evident that small countries were more successful in the deployment of vaccines in their territory, with small countries worldwide occupying the top ranks of the countries vaccinating most people in their territory [59–61]. The small size of these countries was clearly instrumental in facilitating access to the vaccines.

5. Conclusion

Issues of capacity in small countries are not just related to the hospitals and healthcare systems, but even the public health response. The latter can easily be overwhelmed and the country might have to decide to abandon the already delayed contact tracing and move to mitigation at a lower incidence level. Success in overcoming the COVID-19 pandemic highlighted the need of small countries to collaborate between themselves and with larger countries; and the need to capitalise on the small size of the country to seek cohesion between the different sectors. This leads not only to a synergistic approach to address the crisis, but also to more coherent messages from different sectors of the government as they reach the population. The small size makes it more amenable to send the right messages with the right information to the people to increase the effectiveness of the measures which are being taken through more compliance.

While small countries have managed to control the pandemic better by bringing down the cases close to zero, on the other hand they were more vulnerable to sharp rises in subsequent waves as a consequence of seeking to reopen to tourists without the necessary precautions. Malta, Cyprus, Montenegro and San Marino shared the same vulnerabilities, whether being islands or landlocked, and they each had to build capacity in similar ways. The collaboration efforts within the EU for the procurement of vaccines whether through the EU or through other international collaboration like COVAX greatly lessened the fierce competition as had been seen in the market for medical supplies earlier on in the pandemic. Their small market would help small countries to acquire enough stock to achieve herd immunity in their populations as early as possible and hasten the end of the pandemic for their citizens. Lessons learnt (and still being learnt) during this pandemic can help small states to continue collaborating together even in future adversities, including other pandemics.

Declaration of Competing Interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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