

# Sweden's coronavirus strategy: The Public Health Agency and the sites of controversy

Arash Heydarian Pashakhanlou 

Department of Military Studies, Swedish Defence University, Stockholm, Sweden

## Correspondence

Arash Heydarian Pashakhanlou, Department of Military Studies, Swedish Defence University, Box 278 05, Drottning Kristinas väg 37, Stockholm 115 93, Sweden.  
Email: [arash.heydarian.pashakhanlou@fhs.se](mailto:arash.heydarian.pashakhanlou@fhs.se)

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## Abstract

In contrast to the vast majority of Western countries, Sweden left large segments of the society open instead of imposing a lockdown to combat the spread of the coronavirus. As a result, the Swedish COVID-19 measures, largely devised by its expert agency on health, garnered widespread international attention. Despite the global interest in the corona strategy of the Public Health Agency of Sweden (PHAS), there are currently no systematic studies on their COVID-19 policy. The present investigation focuses on the controversies that have characterized PHAS' work with reference to risk assessments, facemasks, voluntarism, testing, and the protection of the elderly during the pandemic. Overall, this inquiry demonstrates that PHAS' risk assessments were initially overly optimistic and their facemask recommendations in conflict with large segments of the scientific community for an extensive period. Yet, their voluntary measures worked moderately well. In their testing, PHAS did not manage to deliver on their promises in time, whereas several measures implemented to protect the elderly were deemed inadequate and late.

## Key Points

- The Public Health Agency of Sweden (PHAS) was initially overly optimistic in its risk assessments regarding the spread of COVID-19 within the country.
- The facemask recommendations of PHAS was in conflict with large segments of the scientific community for an extensive period.

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- PHAS did not manage to deliver 50,000–100,000 coronavirus tests per week as promised in a timely fashion.
- Several measures that the PHAS implemented to protect the elderly were deemed inadequate by the Corona Commission in Sweden.

**KEYWORDS**

controversy, COVID-19, facemasks, pandemic, public health agency, risk, Sweden, testing, the elderly, voluntarism

## INTRODUCTION

Sweden pursued a rather unique strategy in tackling the coronavirus pandemic. It allowed bars, restaurants, schools, and shops to stay open when most Western countries opted for a lockdown. According to Oxford's Government Stringency Index, Sweden had the most lenient COVID-19 policy possible with a score of zero up until March 8, 2020 (Hale et al., 2020).<sup>1</sup> This approach received both international praise and criticism. Dr. Mike Ryan, director of the World Health Organization (WHO), stated that “if we are to reach a ‘new normal’, in many ways Sweden represents a future model” (Russell, 2020). Conversely, the former President of the United States, Donald Trump, tweeted that “despite reports to the contrary, Sweden is paying heavily for its decision not to lockdown. As of today (April 30, 2020), 2462 people have died there, a much higher number than the neighboring countries of Norway (207), Finland (206), or Denmark (443)” (Bowden, 2020).<sup>2</sup>

Although the merits of the Swedish coronavirus strategy have been hotly debated (Campos-Mercade et al., 2021; Drefahl et al., 2020; Irwin, 2020; Kavaliunas et al., 2020; Pierre, 2020; Yan et al., 2020), there are currently no comprehensive examinations of the policies of its public health agency. This is a major oversight as the Public Health Agency of Sweden (PHAS; Folkhälsomyndigheten in Swedish) has been central in devising the country's response to the COVID-19 pandemic. The present inquiry helps to fill this important gap in the literature by assessing some of the most controversial and debated issues concerning PHAS' corona efforts. These include PHAS' risk assessments, its policy on facemasks, voluntarism, testing, and the protection of the elderly.

This article, therefore, aims to address these topics through a careful in-depth analysis of primary sources by PHAS, WHO, European Centre for Disease Prevention and Control (ECDC) as well as scholarly publications and media reports, in which information regarding PHAS' COVID-19 policies has been disseminated. To ensure the timely completion of the article, material published after February 17, 2021 will not be considered here. An evaluation of the vast array of data up until this date reveals that PHAS' risk assessments were overly positive between January 31, 2020 and March 10, 2020. In addition, the scientific community increasingly challenged PHAS' stance against facemasks until the agency altered its decision and recommended the general use of facemasks under specific conditions. These new recommendations were introduced on January 7, 2021. Yet, the agency's voluntary approach has been moderately successful owing to a failure to deliver sufficient and agreed quantities of tests on time. Moreover, PHAS' policy concerning the elderly has been considered insufficient in several aspects.

These arguments are developed at length in the forthcoming sections. The first section takes a closer look at PHAS as an agency and its mandate during the COVID-19 pandemic. The ensuing five sections are devoted to the analysis of the controversies concerning PHAS' risk assessments, facemask policy, voluntarism, testing and the protection of the elderly.



The article's concluding section summarizes the main findings and examines the implications. It is, however, appropriate at this point to contextualize the forthcoming discussions by taking a closer look at PHAS and its role during the ongoing crisis.

## PHAS AND ITS MANDATE

PHAS was established in 2014 through a merger between the Swedish Institute for Communicable Disease Control (Smittskyddsinstitutet in Swedish) and The Swedish National Institute of Public Health (Folkhälsoinstitutet in Swedish) (Folkhälsomyndigheten, 2018b). PHAS is an expert government agency with the overall responsibility for communicable disease control in Sweden. The agency describes itself as an “expert authority [that seeks to] promote health, prevent illness and protect against various forms of health threats” (Folkhälsomyndigheten, 2018a).

Although PHAS is accountable to the Ministry of Health and Social Affairs (Folkhälsomyndigheten, 2018b) and falls under the responsibility of its minister, Lena Hallengren, the Swedish constitution prohibits ministerial rule. In practice, this means that Hallengren is not allowed to interfere in the individual decisions and daily operations of PHAS. In turn, PHAS is obliged to follow the laws and regulations imposed by the government but may apply them autonomously. PHAS does not have the authority to pass laws and can only provide guidelines and recommendations on how various actors should behave within its area of expertise. As such, the Swedish government has no legal obligation to follow PHAS' instructions and may disregard their advice (IFFS, 2020).

Yet, the Swedish government has abided by PHAS' COVID-19 recommendations and the agency has been afforded a central role during the ongoing pandemic. Even compared to neighboring countries, such as Norway and Denmark, Sweden followed the suggestions of its Public Health Agency more closely. For instance, when the Public Health Agencies of the aforementioned Nordic nations advised against the closure of schools, the Norwegian and Danish governments decided to close them nevertheless (Edwards, 2020). In contrast, the Swedish government acted in line with PHAS recommendations.

The Swedish Prime Minister, Stefan Löfven, publicly declared that the government generally heeds the advice and guidelines of its expert agencies since they possess deep knowledge concerning these issues (Eriksson, 2020). Similarly, Hallengren stated that they relied on the assessments of expert agencies in general and, those of PHAS in particular, to combat the coronavirus pandemic (DN-TT, 2020). Johan Carlsson, Director General at PHAS, reiterated these sentiments, confirming the agency's directive and advisory responsibility for questions concerning COVID-19 (Örstadius et al., 2020). It is thus apparent that PHAS had a strong mandate during the pandemic. Yet, it is important to note the contention of many analysts that the Swedish government had lost some of its faith in the agency by November 2020, and PHAS' influence decreased as a result (Lönegård, 2020; Rayman, 2020). This was long after PHAS conducted its risk assessment regarding the potential spread of the coronavirus in Sweden, which is the subject of the next section.

## PHAS AND RISK ASSESSMENT

Risk assessments seek to identify potential hazards, estimate the likelihood of potential effects on individuals and provide an indication of the degree of harm or damage likely to occur in case of exposure to the hazard (Health and Safety Executive, 2014). Should the risk of a public health concern be sufficiently high, appropriate measures would need to be identified to mitigate potential effects. This is because the main purpose of risk assessments

is to provide the most accurate analysis possible to enable an informed course of action that minimizes the threat to the population posed by the hazard (Asante-Duah, 2017, ch. 5). In the case of PHAS, its COVID-19 risk assessments have been a site of controversy and been deemed “inflexible,” “extreme” (Jansson, 2020), and “wrong,” (TT, 2020a) by critics (see also, Elgh, 2020; von Hall, 2020b; Rocklöv et al., 2020).

In this article, it is PHAS' risk assessments regarding the likelihood of the spread of the coronavirus in Sweden that will be evaluated. For the purposes of assessment, the agency has adopted a five-point scale that ranges from “very low,” “low,” “moderate,” “high,” to “very high.” Further elaboration of these scales are not provided in PHAS' COVID-19 risk assessment reports (Folkhälsomyndigheten, 2020j, 2020n). WHO (2020k) does however provide this information in their documents as illustrated in the table below.

Very low	Overall risk of transmission and further spread of COVID-19 is considered very low.
Low	Overall risk of transmission and further spread of COVID-19 is considered low.
Moderate	Overall risk of transmission and further spread of COVID-19 is considered moderate.
High	Overall risk of transmission and further spread of COVID-19 is considered high.
Very high	Overall risk of transmission and further spread of COVID-19 is considered very high.

To ensure a fair examination, the accuracy of PHAS' risk assessments will only be judged against information that was known at the time, as the expert agency lacked the benefit of hindsight when publishing their risk assessments. As PHAS states that their evaluations are based on information from WHO, ECDC, and the reported Swedish cases, their risk assessments will be appraised against this data (Folkhälsomyndigheten, 2020b).

On January 16, 2020, PHAS reported that a new coronavirus had been discovered. Though the agency assessed the risk of the infection spreading to Sweden as “very low,” the lowest level on its five-point scale risk assessment evaluation (Folkhälsomyndigheten, 2020j, 2020n), this assessment later emerged as inaccurate. This is apparent as the first confirmed case of COVID-19 in Sweden was discovered on January 31, 2020, and a year later 566,957 people or approximately 5.5% of the Swedish population had been infected by the virus (Dahl, 2021; Folkhälsomyndigheten, 2020a).

Yet, the erroneous infection risk assessment of PHAS on January 16, 2020 is understandable. Four days before, the Chinese government had informed the WHO “that there is no clear evidence that the virus passes easily from person to person” and that COVID-19 had not been detected outside of Wuhan (WHO, 2020f). Hence, PHAS may simply have relied on this data and thereby deemed infection spread to Swedish nationals unlikely. It was not until January 20, 2020 that China confirmed that the coronavirus was contagious, after which an additional 10 days passed before the WHO declared a global emergency (Kuo, 2020). PHAS' infection spread assessment on January 16, 2020 was, therefore, not unreasonable in light of the information known at the time.

On January, 30, 2020, WHO released a statement suggesting that the coronavirus might spread across the world. “All countries should be prepared for containment, including active surveillance, early detection, isolation and case management, contact tracing and prevention of onward spread of 2019-nCoV infection, and to share full data with WHO” (WHO, 2020h). The following day, Karin Tegmark Wisell, head of the microbiology department at PHAS, stated that they currently considered the risk of COVID-19 dissemination within the country to be “very low” based on the experiences of other countries (Folkhälsomyndigheten, 2020a).

The risk assessment was made despite WHO's statement the previous day, Chinese confirmation of human-to-human transmission of COVID-19 11 days earlier, and recent detection of the first case in Sweden (Lee & Kelland, 2020). Additionally, reports of limited human-to-human transmission of COVID-19 outside of China had appeared by that time. WHO announced that 20 countries had been infected by the coronavirus on January 31 2020, and set their COVID-19 risk assessment to "high" at the global level (WHO, 2020, 2020a). The faulty infection risk assessment of PHAS by January 31 can, thus, no longer be explained by the absence of information.

Instead, it mirrors the most optimistic assessments of ECDC. On January 31, 2020, ECDC estimated that human-to-human transmission within the EU would be "very low" to "low," "if cases were detected early and appropriate infection prevention and control (IPC) practices were implemented." Yet, ECDC warned that late detection of the virus "without the application of appropriate infection prevention and control measures would result in the "high" likelihood of human-to-human transmission". They also considered the potential impact of a coronavirus outbreak to be "high" (ECDC, 2020c). It is, therefore, apparent that PHAS' COVID-19 risk assessment on January 31 only coincided with the best-case scenario envisaged by ECDC.

On February 25 2020, PHAS finally raised its infection risk assessment regarding the general dissemination of coronavirus within the country from "very low" to "low." They posited that their new appraisal was mainly based on data from WHO and ECDC regarding the global spread of the coronavirus (Folkhälsomyndigheten, 2020f). On the same day, WHO had reported 80,239 confirmed cases of corona infection around the world with 2700 casualties and 34 affected countries. Their global risk assessment for COVID-19 was set as "high" (WHO, 2020b). ECDC estimated the risk of COVID-19 infection for people in the EU as "low" to "moderate" on February 23, 2020 (ECDC, 2020d). Hence, even though PHAS' claims that they mainly base their assessment on information from WHO and ECDC regarding the global spread of the coronavirus, their risk assessment only coincides with the most optimistic appraisal of ECDC on this occasion as well.

On March 2, 2020, PHAS raised its general infection risk assessment of coronavirus within the country once again, this time, from "low" to "moderate" (Folkhälsomyndigheten, 2020n). The WHO report from that day identifies 88,948 confirmed cases of COVID-19 infections worldwide, with 3043 deaths and 64 infected countries. By that time, the WHO global risk assessment for the coronavirus had reached its peak—"very high" (WHO, 2020c). ECDC evaluated the risk associated with COVID-19 in the EU as "moderate" to "high" on the same day (ECDC, 2020b). Once again, PHAS' risk assessment corresponded with the most benign scenario predicted by ECDC.

At this point, one may wonder why PHAS consistently underestimated the risk of a general coronavirus spread in Sweden. Available evidence indicates that this may be because they operated under an erroneous assumption. In an interview published on March 7, 2020, the state epidemiologist of PHAS, Anders Tegnell, suggested that COVID-19 is not a classic pandemic causing widespread illness simultaneously across the world (Falkirk, 2020). On that day, 94 countries had reported cases of COVID-19 and the number of infected people globally had surpassed 100,000 (WHO, 2020d). Instead, Tegnell predicted that the virus would "jump" between different "hot spots" such as Wuhan and Northern Italy (Falkirk, 2020). This mistaken belief could explain why PHAS' assessment regarding the general spread of the coronavirus in Sweden was excessively optimistic during this period.

In contrast, Björn Olsen, professor of infectious medicine at Uppsala University in Sweden, had reportedly predicted a coronavirus pandemic as early as mid-January 2020 (Blume, 2020). On February 23, 2020, Olsen also criticized PHAS for toning down the risks of a general coronavirus spread in Sweden and a full-fledged global pandemic. Tegnell dismissed the criticism at the time (Israelsson, 2020). Yet on March 10, 2020, PHAS would essentially confirm Olsen's concerns as it immediately raised its risk assessment from



“moderate,” to the highest level possible, “very high” (Folkhälsomyndigheten, 2020b). This coincided with WHO's global risk assessment for the day, whereas the ECDC risk assessment is “high,” in their report closest to the date, published on March 12, 2020 (ECDC, 2020a; WHO, 2020e). It was, thus, not until March 10, 2020 that PHAS' risk assessment matched that of WHO. As has been demonstrated, their previous risk assessments, from January 31, 2020 and onwards, had been significantly lower than WHO's, aligned with the most optimistic evaluations of ECDC. Below is a summary of PHAS' risk assessment vis-à-vis WHO and ECDC.

Actor	Risk assessment regarding the spread of COVID-19				
	(16-01-2020)	(31-01-2020)	(25-02-2020)	(02-03-2020)	(10-03-2020)
PHAS (Sweden)	“Very low” (Inaccurate but understandable)	“Very low” (Inaccurate)	“Low” (Inaccurte)	“Moderate” (Inaccurate)	“Very high” (Accurate)
ECDC (EU)	Not available for this date	“Very low” to “low”	Not available for this date	“Moderate” to “high”	Not available for this date
WHO (World)	Not available for this date	“High”	“High”	“Very high”	“Very high”

Overall, this investigation reveals that PHAS' initial, inaccurate risk assessment on January 16, 2020 may be considered understandable due to the limited and erroneous information available at the time. Nevertheless, their subsequent underestimations regarding the risk of a general spread of coronavirus in Sweden up until March 10, 2020 cannot be explained by the lack of data. Other experts such as Olsen did, after all, produce more accurate risk assessments regarding Sweden in this period. Instead, PHAS' overly benign risk assessments seem to have been rooted in an erroneous assumption about the way in which COVID-19 spreads, as we have seen. The convictions that informed PHAS' facemask policy and its congruence with the available evidence are discussed in the next section.

## PHAS AND FACEMASKS

The purpose of facemasks is to protect users against infections and limit the transmission of virus to others.<sup>3</sup> Yet, PHAS insisted that the scientific evidence supporting the effectiveness of facemasks is weak. As such, they claimed that facemask use was unnecessary in everyday life to protect oneself and others from COVID-19. Moreover, they asserted that the general use of facemasks may even be counterproductive as slip downs and facemask-induced itching may cause people to touch their mouths, eyes or noses more frequently, thereby increasing the risk of infection. Alternatively, it may encourage those with mild symptoms to go out in the public and potentially infect others (Folkhälsomyndigheten, 2020d).

PHAS' position on facemasks has been a major site of controversy, where critics have called PHAS' line “a serious mistake” (von Hall, 2020a), “inconsistent” (Pihl, 2020), and “very strange” (Expressen TV, 2020) (see also, Cederblad, 2020; Olsson, 2020; Westin, 2020). Hence, this section is devoted to the hotly debated topic of facemasks. As PHAS is supposed to base their recommendations on national and international expert knowledge, the present investigation will be conducted in line with this obligation (Folkhälsomyndigheten, 2020k).

An examination of this issue reveals that PHAS' initial position regarding facemasks stood in contrast to the updated guidance of WHO from June 5, 2020. On this date, its Director-General stated that “in light of evolving evidence, WHO advises that governments should encourage the

general public to wear masks where there is widespread transmission and physical distancing is difficult, such as on public transport, in shops or in other confined or crowded environments” (WHO, 2020i). In response, Tegnell asserted that the Swedish strategy posits that those who are ill should stay at home rather than going out with a facemask and that the prospects of maintaining physical distance in Sweden are good (TT, 2020e). In other words, WHO's recommendations were deemed unapplicable to the Swedish context.

Tegnell's two-fold argument needs scrutiny. First, as PHAS itself stated on its website, reports suggest that people without symptoms have infected other people (Folkhälso-myndigheten, 2020g). As early as April 8, 2020, Tegnell himself claimed that studies had repeatedly shown that a very large proportion of those infected with the coronavirus, potentially as many as nine out of ten, show few or no symptoms at all (Haddad, 2020). If these individuals are unaware that they have COVID-19 and may infect others, would it not be sensible for them to wear face masks when they are in public? Tegnell rejected this hypothesis, contending facemask use for this purpose to be an insignificant factor in the spread of the infection (Cederblad, 2020).

Tegnell's second argument regarding the Swedish context and its favorable conditions for maintaining physical distance may be true in theory. Certainly, Sweden is not a densely populated country. However, that does not mean there are no confined spaces in Sweden and that crowds never form. In fact, Tegnell himself has expressed concerns regarding crowd gatherings in Sweden in general and Stockholm in particular (Holmgren, 2020). Consequently, it is difficult to rationalize Tegnell's arguments against the Swedish population wearing facemasks in confined or crowded spaces.

PHAS' response to such criticism was to argue that there is a lack of empirical evidence to support claims of facemask efficacy. Tegnell initially maintained that only two older facemask studies from the SARS epidemic had been conducted and that these provided insufficient scientific support (Cederblad, 2020). Yet, the number of studies that support the use of facemasks have increased over time. For instance, on June 1, 2020, a “systematic review of 172 studies (44 comparative studies;  $n = 25,697$  patients) on COVID-19, SARS, and MERS” found that facemasks offer protection against infection by COVID-19 (Chu et al., 2020, 1982). More recently, a literature review of 25 published articles conducted by Karolinska Institute in Sweden and McMaster University in Canada demonstrated that the protection afforded by facemasks is “more than sufficient to recommend their use, particularly given the difficulty in controlling the ongoing pandemic” (Karolinska Institutet, 2020). Tegnell labeled this article ‘theoretical’, emphasizing that such measures would not necessarily work in practice to mitigate societal spread of the coronavirus (Kerpner, 2020).

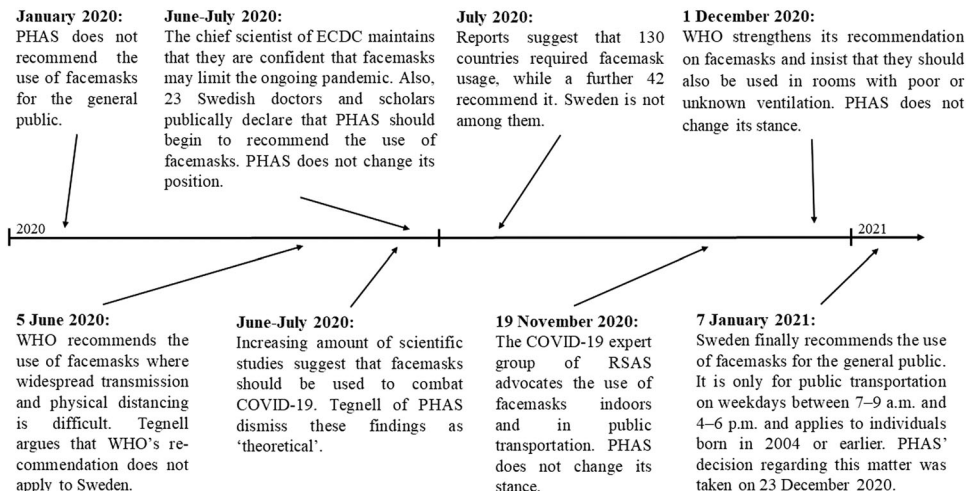
Nevertheless, investigations indicating that facemasks reduce the spread of COVID-19 have continued to accumulate (Eikenberry et al., 2020; Mitze et al., 2020; Stutt et al., 2020). The chief scientist of ECDC, Mike Catchpole, confirmed that the number of studies in support of facemasks have increased over time and that ECDC is now far more confident that the use of facemasks may limit the ongoing pandemic in an interview published on July 28, 2020 (Bengtsson, 2020). Moreover, when WHO (2020i) recommended the use of facemasks in confined and crowded environments, it explicitly did so after “a careful review of all available evidence, and extensive consultation with international experts and civil society groups”. These developments prompted 23 Swedish doctors and scholars to publicly question PHAS' refusal to follow WHO's guidelines regarding the use of facemasks in crowded environments in a coauthored debate article published in Sweden's largest newspaper, *Aftonbladet*, on June 13, 2020 (Bjerner et al., 2020).

Despite the growing evidence in favor of facemasks, PHAS did not change its recommendation. In contrast, 130 countries required facemask usage, while a further 42 countries had recommended it by July 2020 (Sveriges Radio, 2020). PHAS claimed that they had reached a different conclusion after their assessment of 36 studies. When Melinda Mills and her colleagues reviewed these studies, they found that 26 of them actually support

or recommends the use of facemasks. The authors noted that the remaining 10 studies were often inconclusive or unrelated to the topic. They, therefore, conclude that the studies PHAS relied upon did not support their position. Rather, these publications suggest that facemasks should be used to mitigate the spread of COVID-19 (Mills et al., 2020).

The expert group of the Royal Swedish Academy of Sciences (RSAS), an independent organization that seeks to promote the sciences and strengthen their influence in society, published a report on this issue on November 19, 2020. In this publication, they advocated the use of facemasks indoors and in public transportation (Normark et al., 2020, p. 19). On December 1, 2020, WHO (2020m) strengthened its recommendation on the use of facemasks and insisted that they should also be used “in rooms with poor or unknown ventilation ... if you have any doubts, it's safer to simply wear a mask.”

Despite these developments, it was not until 23 December 2020 that PHAS finally decided to recommend the use of facemasks in public transport. Their recommendation was also far more restrictive than that of RSAS and WHO. This is apparent in their restriction of the new recommendation, starting from January 7, 2021, to individuals born in 2004 or older on public transportation on weekdays between 7–9 a.m. and 4–6 p.m. (Folkhälsomyndigheten, 2021a). A summary of key events up until this date is outlined below.



All in all, this overview illustrates that PHAS' initial recommendations regarding face-masks stood in sharp contrast to the perspectives of numerous national and international experts. That is remarkable as PHAS is supposed to base their recommendations on their expert knowledge (Folkhälsomyndigheten, 2020k). Only by December 23, 2020 did they make the decision to alter their position on facemasks and recommend their use to the general public, albeit in a far more restrictive fashion than advised by RSAS and WHO. The next section, examines whether PHAS' voluntarism fared any better.

## PHAS AND VOLUNTARISM

As has been mentioned, PHAS does not have the mandate to pass law and legally enforce decisions (Folkhälsomyndigheten, 2020d, p. 19). It may only provide guidelines and recommendations. As such, Sweden relied extensively on voluntary cooperation and individual responsibility rather than enforced lockdowns to fight the COVID-19 (Grietje Franssen, 2020). The situation changed somewhat, at least formally, when the Swedish



government imposed a temporary pandemic law on 10 January 2021, to be in effect until the end of September 2021. The new law “makes it possible to limit visitor numbers and change opening hours to prevent crowding” and “enables the government to limit people's use of public spaces” (Krisinformation, 2021). As it is PHAS that is of interest in this article, the discussions are limited to the period before the formal introduction of the temporary pandemic law to enhance the validity of this study project.

It is this voluntary aspect of Sweden's strategy that has raised eyebrows and caused the most controversy globally (Grothe-Hammer & Roth, 2020; Irwin, 2020). Critics maintain that tougher restrictions might have saved more lives (Savage, 2020) and called the “lax” Swedish approach “a terrible mistake” (Baker, 2020), “a fatal error” (Pieper, 2020) and a “Russian roulette” (Henley, 2020b). The remainder of this section takes a closer look at this issue by examining how well the Swedish populace have followed PHAS' voluntary recommendations.

On March 16, 2020, PHAS recommended individuals over the age of 70 to limit close interpersonal contacts and avoid crowded places such as public transportation and stores (Folkhälsomyndigheten, 2020i). According to a survey, 87% of the respondents within this age group responded that they followed these recommendations (Novus, 2020). Likewise, a study revealed that the mobility amongst the elderly in Stockholm had decreased by roughly 50%, 8 days after the announcement of this recommendation (SSE, 2020; Wetter et al., 2020). At the same time, PHAS declared that employers should consider recommending their employees to work from home to prevent the spread of the coronavirus and help relieve the healthcare system, especially in the Stockholm region (Folkhälsomyndigheten, 2020i). Despite this very careful formulation, the response was overwhelming (Folkhälsomyndigheten, 2020i). Reports suggest that approximately half the Swedish workforce was working from home by the following month (Henley, 2020a). According to Google Mobility Report, this trend has been sustained over time, with a 29% decline reported in workplace mobility in Sweden on February 12, 2021, as compared to the baseline (Google, 2021, p. 2).

On March 17, 2020, PHAS recommended higher education institutions and upper secondary schools in Sweden to conduct distance learning to slow the spread of COVID-19 (Folkhälsomyndigheten, 2020h). The effected educational institutions obliged (Frejdeman, 2020). Moreover, after PHAS' recommendation to maintain social distancing, the number of people using public transportation reportedly decreased by about 50% and the streets of Stockholm were roughly 70% less populated than usual (Henley, 2020a).

On March 19, 2020, PHAS urged people to avoid unnecessary trips within the country (Folkhälsomyndigheten, 2020m). Data from the Swedish telecommunications company, Telia (2020), indicates that travels from the Stockholm region decreased by about 80%–90% during the Easter weekend and noted similar results in other parts of the country as well. Similarly, their data indicates that longer trips during Christmas time decreased by 40% whereas shorter trips, within the municipalities, declined by 17%, compared to the previous year (Wikén, 2020). According to the Google Mobility Report from January 8, 2021, the mobility in retail and recreation decreased by 35%, grocery and pharmacy by 15%, parks by 10%, transit stations by 53% and workplaces by 44%, compared to the baseline. Only visit to residential areas increased by 16%, on this date (Google, 2021, pp. 1–2). Despite the general decline in mobility, a comparative assessment by the OECD suggested that Sweden had fared worst of the 28 examined countries in reducing population mobility over the March–May 2020 period, compared to baseline. A 22.3% reduction in public transport and leisure activities was noted in Sweden, whereas Spain, ranked in first place, saw a decline of

65.6% (OECD/European Union, 2020). An assessment of how successful this recommendation and those preceding it have been is provided in the table below.

PHAS' Recommendation	Result
March 16, 2020: Individuals over the age of 70 should limit close interpersonal contacts and avoid crowded places such as public transportation and stores.	Study reports that the mobility amongst the elderly in Stockholm has decreased by roughly 50% after 8 days. Partial success.
March 17, 2020: PHAS recommends higher education institutions and upper secondary schools in Sweden to conduct distance learning instead.	Higher education institutions and upper secondary schools. Success.
March 19, 2020: PHAS urges people to avoid unnecessary trips within Sweden.	<p>OECD finds that Sweden was the country with the lowest population mobility reduction during the March–May, 2020 period, compared to baseline. Failure.</p> <p>Mobility data indicates decreased traveling within the country during Easter and Christmas in 2020. Partial success.</p> <p>Data from January 8, 2021 suggested decreased mobility in “retail &amp; recreation,” “grocery &amp; pharmacy,” “parks,” “transit stations” and “workplaces.” Visits to “residential areas” increased. Partial success.</p>

Further inquiries into the effectiveness of Swedish voluntarism, have suggested that this approach has produced results similar to those seen in European countries that introduced strict measures at a later stage of the pandemic. However, the results also reflect a worse performance than in nations where tougher restrictions and measures were implemented at an earlier stage (Kamerlin & Kasson, 2020). Another study compared countries that implemented mandatory lockdown orders and business closures (England, France, Germany, Iran, Italy, Netherlands, Spain, and the United States) with South Korea and Sweden, who adopted less severe, voluntary responses. The study found “no clear, significant beneficial effect of [more restrictive measures] on case growth in any country” (Bendavid et al., 2021, p. 1).

On the whole, the available evidence indicates that a significant portion of the Swedish population has taken PHAS' voluntary recommendations to heart. This is the case even though OECD's report demonstrates that Sweden had the lowest population mobility reduction during the March–May 2020 period, compared to baseline. As such, the available evidence suggests that voluntarism has worked moderately well.

## PHAS AND TESTING

Testing is one of the key measures in fighting the coronavirus. As Director-General of WHO, Tedros Adhanom Ghebreyesus stated: “You cannot fight a fire blindfolded. And we cannot stop this pandemic if we don't know who is infected. We have a simple message for all countries: Test, test, test. Test every suspected case. If they test positive, isolate them and find out who they have been in close contact with up to 2 days before they developed symptoms, and test those people too” (WHO, 2020j). Likewise, PHAS representatives have

maintained that testing is essential for detecting and stopping the spread of a potential infection (Folkhälsomyndigheten, 2020c; Thomsen, 2020). Due to the importance of testing, it is hardly surprising that PHAS' handling of this issue has been a major site of controversy and debate. As already mentioned, critics have labeled their approach “inefficient,” “inaccurate” (Malmström, 2020), and “insufficient” (TT, 2020d). Therefore, this section will examine PHAS' work on testing.

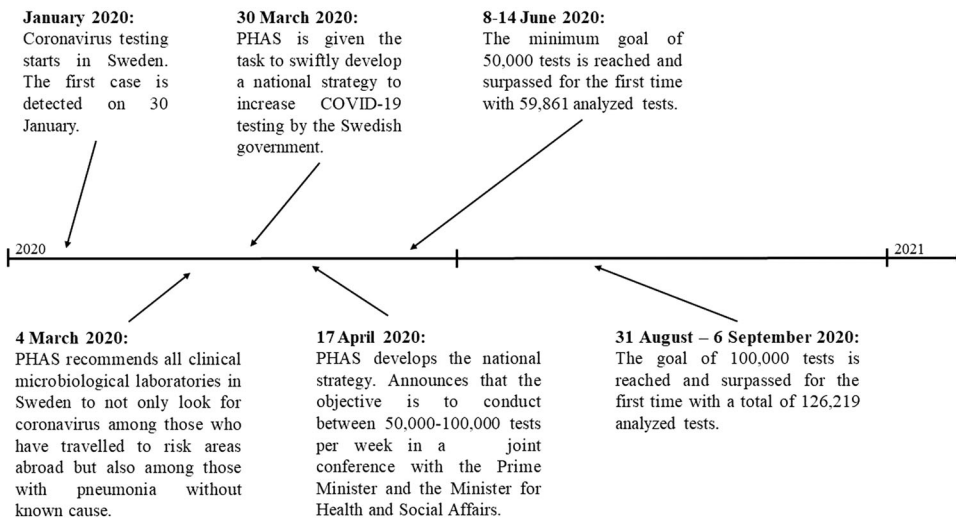
Presently, PHAS advises people with symptoms of COVID-19 to be tested and in cases of contact tracing, even those who do not display any symptoms. Special recommendations exist “for those traveling or who have traveled to Sweden from countries with new variants of the coronavirus”. The testing itself is organized “in accordance with regional and local guidelines” (Folkhälsomyndigheten, 2021b). The regions are reimbursed by the state based on the number of tests they conduct. In addition, the clinical medical laboratories are obliged to inform PHAS of how many tests they have done and report their results (Folkhälsomyndigheten, 2020c).

According to PHAS, the COVID-19 testing in Sweden began in January 2020 and about 20 tests had been conducted before the first positive case within the country was identified on January 30 of that year (Folkhälsomyndigheten, 2020r). In February 2020, PHAS stated that eight additional clinical medical laboratories in the country would be equipped to analyze tests to enhance their capacity. According to reports, 150 tests had been analyzed by that time, one of which was discovered to be positive (TT, 2020b). On March 4, 2020, PHAS amped up these efforts by recommending all clinical microbiological laboratories in the country not only to look for coronavirus cases among those individuals who had traveled to risk areas abroad but also among persons with pneumonia without known cause (Folkhälsomyndigheten, 2020c; Thomsen, 2020). The analysis of COVID-19 tests in the country increased rapidly. During the first 5 weeks of testing, only 180 tests had been completed. During week 12 alone (March 16–22), 10,404 tests had been analyzed (Folkhälsomyndigheten, 2020p, p. 19).

Yet, even these numbers were deemed inadequate. As a result, the Swedish government tasked PHAS with swiftly developing a national strategy to increase COVID-19 testing on March 30, 2020 (Scherman, 2020). PHAS did so on April 17, 2020 (Folkhälsomyndigheten, 2020i). In a joint conference with the Prime Minister and the Minister for Health and Social Affairs, PHAS announced that the objective was to conduct between 50,000–100,000 tests per week (Di, 2020). The previous day, PHAS had reportedly promised the Ministry of Health and Social Affairs that 50,000–100,000 tests would be conducted per week and informed them that efforts to increase the number of tests by significant numbers would commence the following week (Granlund & Svensson, 2020). During the week when PHAS' assurances were made (April 13–19), 24,560 COVID-19 tests were conducted in Sweden. In the following week (Week 18), the number of tests had only increased marginally to 28,802, according to PHAS' own figures. The slow increase continued in week 19 with 29,129 tests and 33,003 tests during week 20. In week 21, the number of performed tests actually fell to 28,986 (Folkhälsomyndigheten, 2020p).

It was not until week 24 (June 8–14), that the minimum goal of 50,000 tests was achieved for the first time with a total of 59,861 analyzed tests, which was almost 2 months after the goal of 50,000–100,000 tests per week had been set. The 100,000 tests milestone was first passed on week 36 (August 31–September 6), with a total of 126,219 analyzed tests and over 4.5 months after the objective was established (Folkhälsomyndigheten, 2020q). This inability to meet testing targets rapidly was reportedly not because of a lack of funding. The government allocated deposited one billion Swedish Crowns (roughly 108 million USD) for the increased testing effort.

When PHAS responded that these efforts would cost 2.5 billion Swedish Crowns (roughly 270 million USD),<sup>4</sup> the government reportedly indicated that it would be willing to allocate the additional resources needed (Granlund & Svensson, 2020). A timeline of the major events pertaining to testing is provided below.



This inquiry finds it apparent that as coronavirus testing has been organized in accordance with regional and local guidelines and carried across different regions in Sweden, testing accountability lies with many different actors. PHAS is not the only relevant actor in this case. What can be established is that PHAS' estimation regarding the number of tests that could be delivered in a timely manner proved overly optimistic. Whether the same can be said of their efforts to protect the elderly is considered in the next section.

## PHAS AND THE ELDERLY

Tegnell openly declared the protection of seniors central to PHAS' COVID-19 strategy (Grietje Franssen, 2020). This is understandable as they are a particularly vulnerable high-risk group. About 90% of coronavirus fatalities in Sweden have occurred among individuals over 70-years old (Socialstyrelsen, 2020). Critics have occasionally blamed PHAS for this tragic outcome. For instance, they have attributed these grim statistics to the agency's lack of strategic measures and preparedness in keeping the virus away from the elderly care (Juhlin, 2020). Others, have accused PHAS of the failure to provide all personal in elderly care with adequate protective equipment and the inability to protect the seniors themselves (Bäsén, 2020; see also, Lundahl, 2020). Before exploring this site of controversy in greater depth, it is important to clarify that PHAS is not generally responsible for elderly care in Sweden. "The municipality or county council is responsible for all health and social care of the elderly, including contact with doctors and emergency medical care" (Informationsverige.se, 2018). The way these procedures are carried out varies within the country (Informationsverige.se, 2018). These points must be kept in mind as PHAS' handling of the elderly during the pandemic is considered below.

As early as January 16, 2020, PHAS had reportedly declared that the elderly might be at greater risk of a more serious disease progression on their website (Delin et al., 2020). Yet, it was not until March 10, 2020 that PHAS recommended that those who work in elderly care to remain at home in case of developing symptoms and advised against unnecessary visits to see the elderly (Folkhälsomyndigheten, 2020e). As we have seen, March 10, 2020 is also the date when PHAS raised its risk assessment concerning the general spread of the coronavirus in Sweden to “very high.” Hence, PHAS' initial underestimation regarding the spread of COVID-19 within the country could explain why the agency took so long before issuing their recommendation for the elderly care sector.

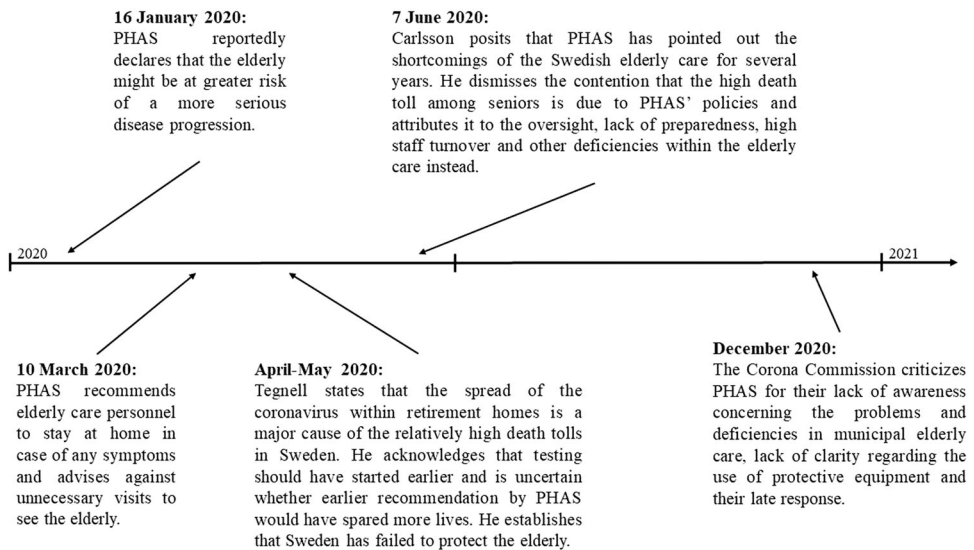
Tegnell publicly stated that one of the major reasons behind the significantly higher death tolls in Sweden compared to neighboring Nordic countries was due to the spread of the coronavirus within retirement homes. Although Tegnell claimed that it is difficult to determine whether the death toll might have been reduced if PHAS' recommendations had arrived earlier, he also acknowledged simply that the agency should have initiated testing efforts sooner, as was the case in neighboring Nordic countries (Larsson, 2020). He also admitted that Sweden had failed to protect the elderly (Dahl, 2020).

As the elderly care in Sweden falls under the responsibility of the municipality or county council, this begs the question of how accountable PHAS are for the deficiencies noted by Tegnell. According to the agency's Director-General Carlsson, the answer to this is very little. In an interview published on June 7, 2020, Carlsson posited that PHAS and other agencies had pointed out the obvious shortcomings of the Swedish elderly care for several years. In his view, the high death toll among seniors is due to oversight, lack of preparedness, high staff turnover, and so forth, within the elderly care. The idea that PHAS should bear the blame for this was dismissed by Carlsson as “highly remarkable” (TT, 2020c).

An investigation by the Health and Social Care Inspectorate (HSCI; Inspektionen för vård och omsorg in Swedish) did indeed find serious shortcomings concerning medical care and treatment of the elderly in retirement homes during the pandemic across all regions of Sweden (IVO, 2020a). Moreover, they noted that of the 1700 retirement homes in Sweden, the conditions in 91 of them were particularly acute (IVO, 2020b). Finally, the National Board of Health and Welfare (NBHW; Socialstyrelsen in Swedish) reportedly suggested that only about 13% of patients that had died from the coronavirus in retirement homes had received health care at a hospital (Nilsson, 2020). These findings partially confirm Carlsson's remarks.

Yet, the Corona Commission appointed by the Swedish government to evaluate the merits of the country's COVID-19 measures challenged Carlsson's assertions on PHAS' responsibility with regard to elderly care. In a report, the Commission criticized PHAS for lacking awareness about the problems and deficiencies in municipal elderly care, which resulted in delayed guidance on measures that the elderly care should adopt. Moreover, the report argued that as PHAS had been well informed about this group's particular vulnerability to COVID-19, PHAS “should have immediately placed more emphasis on conditions in residential care for older persons” (Coronakommissionen, 2020, pp. 7–8). The commission also established that PHAS was partly accountable for the lack of clarity on the use of protective equipment in elderly care, which resulted in disputes and conflicts. Finally, the commission stated that further investigation was needed to establish why PHAS failed to swiftly produce a national strategy for expanded testing, a measure Tegnell deemed necessary to protect the elderly, as previously noted (Coronakommissionen, 2020, pp. 8–9). A recapitulation of these discussions is outlined below.





As these discussions illustrate, many elderly in Sweden seemingly lost their lives prematurely during the pandemic. It is impossible to the number of lives that could have been saved by earlier testing and implementing the recommendations issued by PHAS. Yet, PHAS' area of agency expertise does not encompass elderly care, its care routines, procedures, and services. That responsibility lies with the municipalities and county councils and the deficiencies noted by HSCI and NBHW cannot be ascribed to PHAS. The shortcomings noted by the Corona Commission, they however attribute directly to PHAS.

## CONCLUSION

This article has assessed the efforts of PHAS, the expert government agency on public health issues, which has been afforded a strong mandate during the ongoing coronavirus pandemic. More specifically, this inquiry has focused on the debates and controversies that have characterized the agency's management of the COVID-19 response in Sweden with respect to risk assessments, facemasks, voluntarism, testing, and protection of the elderly. The investigation has revealed that PHAS' risk assessment regarding the general spread of coronavirus in Sweden was overly optimistic until 10 March, where it mirrored the best-case scenario envisioned by ECDC but was considerably more positive than WHO's global risk assessments and other expert prognoses for Sweden.

Moreover, this analysis has highlighted the continuous refusal of PHAS' to change its position on facemasks or recommend their use in confined and crowded places for the general public. This was despite burgeoning evidence in favor of this protective equipment. As such, PHAS' facemask policy diverged from the stance of WHO, ECDC, RSAS, and large segments of the scientific studies on this area. Remarkably, an investigation of the 37 studies that informed PHAS' perspective on facemasks reportedly revealed that the vast majority of these publications found that facemasks probably do help to stop the spread of the virus and should therefore be adopted. In spite of this, PHAS did not endorse facemasks for the public until December 23, 2020. As a result, a very limited facemask recommendation was implemented in Sweden on January 7, 2021, applying only to individuals born in 2004 or older on public transportation on weekdays between 7–9 a.m. and 4–6 p.m. This recommendation was still far more restrictive than that of WHO and RSAS.

In terms of the highly publicized issue of voluntarism, the present study has revealed that the “hands-off” approach of PHAS has worked moderately well. The data demonstrates that institutions and a significant proportion of the Swedish population have willingly followed the recommendations of the expert agency. Higher education institutions and upper secondary schools have conducted distance learning, while significant proportions of the elderly have avoided crowded places. Additionally, remote working has increased while traveling generally declined in line with PHAS' instructions. A cross-country comparison found that the voluntary Swedish approach has been roughly as effective as European countries that adopted restrictive measures late but worse than nations that did so early.

The section devoted to the issue of testing for COVID-19 has clarified the fact that this task involved various actors at the local and regional level, beyond the direct control of PHAS. Yet, the agency is responsible for its failure of delivering 50,000–100,000 tests per week in a timely fashion as it had reportedly promised and received adequate funding for. It took approximately 2 months before the minimum goal of 50,000 tests per week had been reached and more than 4.5 months before 100,000 tests per week were being conducted for the first time.

The discussions regarding PHAS' efforts to protect the elderly disclosed that it was not until March 10, 2020 that the agency urged elderly care staff to stay at home on experiencing any symptoms and proceeded to warn the public against making visits to see elderly people that are not absolutely necessary. As several reports contend, PHAS' late response in updating official recommendations to the Swedish population was despite the agency announcing seniors as a highly vulnerable group as early as January 16, 2020. It is as yet unclear how many lives might have been saved had testing programs and the agency's recommendations been implemented at an earlier stage. In addition, the Corona Commission in Sweden found that PHAS' lacked awareness of the systemic problems and deficiencies in municipal elderly care, failing to provide clear instructions regarding the use of protective equipment while also being slow to act.

Overall, these findings could at least partly explain why the corona pandemic has had such an adverse impact on Sweden compared to many other developed countries thus far. For instance, as on February 17, 2021, the death toll in Sweden amounted to 12,598 while the equivalent numbers in Norway were 607, 725 in Finland and 2319 in Denmark (Statista, 2021). Furthermore, Sweden was listed among the 11 European countries where the COVID-19 pandemic has been particularly acute (WHO, 2020g).<sup>5</sup> Finally, Sweden was ranked at the bottom of OECD's report on the COVID-19 crisis in three categories: (1) “Reduction in populations' mobility over the March–May 2020 period, compared to baseline,” (2) “Number of days required to bring estimated  $R_t$  below one,” and (3) “Weekly reduction in the number of new ICU admissions” (OECD/European Union, 2020). These grim outcomes resulted despite risk assessments provided by the expert agency on crisis management, the Swedish Civil Contingencies Agency, who had assessed the risk of Sweden being affected by a pandemic within 5–50 years as “high” in 2013 (MSB, 2013). Whereas Johns Hopkins Center for Health Security ranked Sweden as the seventh best-prepared country in the world in the event of a pandemic and on top among the Nordic countries, just before the global outbreak of COVID-19 (Cameron et al., 2019, p. 11).

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## CONFLICT OF INTERESTS

The author declares that there is no conflict of interest.



## ETHICS STATEMENT

None declared.

## ENDNOTES

<sup>1</sup>The Oxford Government Stringency Index “is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). If policies vary at the subnational level, the index is shown as the response level of the strictest subregion.” The highest Swedish score to date is 69.44. (Hale et al. 2020).

<sup>2</sup>As on February 17, 2021, the death toll in these countries amounted to Sweden (12,598), Norway (607), Finland (725), and Denmark (2319); see (Statista, 2021).

<sup>3</sup>Although the purpose is universal, cultural biases may exist against the use of facemasks, see for example (Wang et al., 2020).

<sup>4</sup>The figures in USD are based on the currency exchange rate on July 2, 2020.

<sup>5</sup>The other 10 countries listed by WHO's Regional Director for Europe, Dr. Hans Henri P. Kluge, were Armenia, Republic of Moldova, North Macedonia, Azerbaijan, Kazakhstan, Albania, Bosnia and Herzegovina, Kyrgyzstan, Ukraine, and Kosovo (WHO, 2020g).

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## AUTHOR BIOGRAPHY

**Arash Heydarian Pashakhanlou** is an Associate Professor in War Studies at the Swedish Defence University. His work has appeared in the journals *International Relations*, *Defence Studies*, *International Politics*, *The Washington Quarterly*, *Journal of International Political Theory* and *Cooperation & Conflict*, among others. Palgrave published his latest monograph *Realism and Fear in International Relations: Morgenthau, Waltz and Mearsheimer Reconsidered*.

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