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PERSPECTIVE

New French guidelines to adapt the "Isolate/Detect/Trace" strategy for COVID-19 adult peoples or contacts considering the exponential spread of Omicron variant

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Abstract

Introduction: The objectives were to elaborate new recommendations for the French Government taking into account the new epidemiological situation due to Omicron variant of SARS-CoV-2 virus and to maintain essential functions of the State through socioeconomic and health life.

Method: Two self-decision matrix were built for isolation (cases) and quarantine (contacts) and for citizen testing, respectively. The recommendations included in the two matrix were validated internally by experts and scientists from the scientist literature.

Results: A strategic breakdown into five phases corresponding to the possible phases of Omicron variants spread was built. Exceptional and transitory derogation for essential activities was proposed in fully vaccinated professionals. Suspension of quarantine period for fully vaccinated contacts and professionals was proposed with routine self-testing program.

Conclusion: These new HCSP guidelines aims to preserve public health as a whole and to minimize the socioeconomic and health consequences linked to the emergence of the Omicron variant by making trade-offs/adaptations in dependent scientist contexts.

Patient or Public Contribution: HCSP scientists and experts were in charge of drafting the recommendations and promoting them to the Government for their application by regulatory decree voted by law.

KEYWORDS

Covid-19, guidelines, isolation, quarantine, testing

1 | INTRODUCTION

Vaccination with a complete vaccination scheme (two doses as primary vaccination and third dose as booster shot according to the current French guidelines), taking into account the delay in efficacy, continues to

protect effectively against severe forms of the disease on the Delta variant of the SARS-CoV-2 (with uncertainties on the Omicron variant). $^{1-5}$ These observations make it possible to establish that there is a difference between vaccinated and unvaccinated individuals and that it is therefore possible to differentiate the measures to be taken.

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Faced with the Omicron variant, whose contagiousness is increased compared to the Delta variant, the reaction time for the implementation of effective measures against the spread of the Omicron virus in the population is essential. It appears that there have been about 16 million COVID-19 cases and 27,000 deaths since November 19, which is probably when Omicron played a major role. The peak rate was 501,000 cases, at the top end of the estimate of "exceed 200,000 to 500,000 new cases"/day. Before Omicron, the mortality rate was about 1.6% while for Omicron, it was about 0.16%. More importantly, the case rate has dropped to 54,000/day and the death rate to 176/day.

Thus, the High Council for Public Health (HCSP) recalled the importance of the use of nasal self-tests and of the mobilization of all citizens against the spread of the SARS-CoV-2 virus.^{8,9}

The measures must be adapted to the situation from a risk management perspective, which the HCSP published French guidelines in May 2021 with a decision-making matrix¹⁰ proposing different strategies (at the time of Delta variant emergence in France) for reopening establishments open to the public (EOP) taking into account different levels of risk according to the following principles: taking into account the new protection and screening tools (vaccination and self-tests) in addition to the barrier measures; simple, understandable, applicable and adaptable guidelines; phases of deconfinement determined by the achievement of predefined objectives rather than by calendar deadlines; the criticality of the EOPs defined by the risk of transmission of SARS-CoV-2, taking into account their configuration and activities, including those that present limits to the respect of barrier measures; the rate of vaccination coverage in the general population as an essential indicator of progress in deconfinement; strengthening the capacity to involve the most vulnerable populations through programs aimed at improving psychosocial skills.

The HCSP thus proposed a decision-making matrix crossing the levels of epidemic risk (Incidence per 100 000 inhabitants, vaccination coverage and hospital burden) and the levels of criticality for SARS-CoV-2 transmission inside or outside of the EOP (low, intermediate et high levels). The strategy for the gradual opening of EOP is conditioned by these two criteria and is based on three preventive measures: compliance with barrier measures, use of self-tests and gradual management of the density of people (gauge). The HCSP recommended at that time a permanent prospective evaluation of the effectiveness of the measures and their costs/societal impacts.

At the time of Omicron variant emergence in France, the simulations available and the evolution of the epidemic in other countries lead us to believe that the number of daily contaminations will rapidly exceed 200,000 to 500,000 new cases in France and that the number of contacts will be considerable, making quarantine measures impossible. ¹¹

The HCSP has taken into account preliminary epidemiological data on the impact of the spread of the Omicron variant of the SARS-CoV-2 virus in certain countries (i.e. the United States, the Netherlands, the United Kingdom and South Africa in particular), focusing on the kinetics and duration of the epidemic peak and those

of the hospital strain. However, the HCSP specifies that these data are not consolidated to date and that uncertainties remain on the forecasts in France because of generalizations or the risk of "context-dependent" effects to be taken with caution (i.e. age of the populations, level of collective immunity and vaccination coverage, implementation in addition to barrier measures).

1.1 | Context and objectives of French "Isolate/ Detect/trace" doctrine

The objective of the guidelines of this new HCSP opinion concerning the reduction of the social and professional isolation strategy (persons infected by the SARS-CoV-2 virus) and quarantine (contact people) is to preserve public health as a whole and to minimize the societal (socioeconomic) consequences linked to the emergence of the Omicron variant by making trade-offs/adaptations in dependent contexts.³ Firstly, this relief aims to allow hospital staff to continue their professional activities as much as possible and therefore to preserve the functioning of the hospital in a direct way. It should also contribute to the continuity of operators of vital importance, hospital and the entire care system, but also energy, security, transport, cleanliness, food distribution..., which also benefit the health and safety of the entire population. Finally, by reducing the indications and duration of isolation (for people infected with the SARS-CoV-2 virus) and quarantine for contact persons where possible, it also aims to alleviate the psychological burden of the epidemic wave, particularly the expected impact on mental health, and the health and socioeconomic consequences that may be associated with it. 12,13

These guidelines apply to citizens on the one hand and to professionals working in essential jobs, including health professionals working in healthcare settings, nursing homes and ambulatory cares. De facto, the new French guidelines for shortening the duration of professional isolation apply to healthcare workers, as the CDC guidelines.¹⁴

The reduction of the measures proposed in these French guidelines is transitional to respond to the current and foreseeable situation in the coming weeks due to the spread of the Omicron variant. They will have to be piloted in real time by the health authorities and the Government according to the evolution of the epidemiological situation and its impact on the socioeconomic and health tension.

The shortening of isolation time for SARS-CoV-2 infected persons or quarantine measures for contacts is accompanied by:

- The strict application of individual and collective barrier measures.
- Surveillance by virological tests for the lifting of periods of social and professional isolation (persons infected by the SARS-CoV-2 virus) or quarantine (contacts). This surveillance by nasal antigenic self-tests, nasopharyngeal antigenic tests or RT-PCR tests is conditioned by their availability and distribution to the French

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- population, taking into account the social inequalities in health that this may entail for tests that are not covered by the Health Insurance.
- Preparation of measures and technical means (remote work, teleconferences)
- Preparation for the pandemic situation of operators of vital importance and the entire care system, but also energy, security, transport, cleanliness, food distribution, and so forth, which also benefit the health and safety of the entire population.
- Measures to control the density of people (gauges) for given indoor or outdoor locations

The application and definition of the last three types of measures are decided under the authority of the Government.

1.2 **Decision-making matrix**

The first matrix (Tables 1 and 2) proposes a strategic breakdown into five phases corresponding to the possible phases of evolution of the epidemiological situation linked to the concomitant circulation of the Delta and Omicron variants of SARS-CoV-2 (due to the epidemiological characteristics of the latter and its diffusion kinetics). It concerns citizens but also professionals in the whole of social. economic and health life, for certain professions or so-called essential workstations:

- Phase 1: corresponding to the national guidelines of the "Isolation/Testing/Tracing French strategy preceding the emergence and spread of the Omicron variant.
- Phase 2: the health situation is characterized by a strongly increasing number of contaminations and still limited social and economic consequences. Tension is felt in many sectors, including the health sector (absenteeism, annual leave and people infected by the SARS-CoV-2 virus or contacts in quarantine). For this phase 2, the HCSP proposes a strategy based on reducing the duration of social and professional isolation for people and professionals infected with the SARS-CoV-2 virus and on waiving quarantine for contacts engaged in essential activities.
- Phase 3: The social, economic and health situation is severely degraded with a major risk of disruption of socioeconomic and health activities due to the exclusion of a large number of people, particularly professionals in essential positions, including in the health sector. As far as health professionals are concerned, phase 3 is characterized in particular by the fact that health centers are forced to deprogram the treatment, including nonurgent interventions, of a large number of patients. For this phase 3, the HCSP proposes a strategy based on:
- exceptional and transitory derogation with retention of validly vaccinated professionals infected by SARS-CoV-2 but asymptomatic or pauci-symptomatic and not showing respiratory signs of

οŧ people infected with the SARS-CoV-2 virus according to the risk of destabilization for professional isolation measures (Decision-making matrix 1) Adaptation of social and I socioeconomic and health activities in France TABLE 1

	People infected with SARS	People infected with SARS-CoV-2 Social or Professional isolation			
	Phase 1 before November 2021	Phase 2 (December 2021)	Phase 3 (January 2022)	Phase 4 (February 2022)ª	Phase 5 (March 2022)
People with a complete vaccination schedule	National guidelines before the emergence of the	National guidelines before Shortening of the duration of social and the emergence of the professional isolation	Exceptional and transitory exemption from social Shortening of the duration of social and and professional isolation for essential	Shortening of the duration professional isolation	ion of social and n
according to the current	Omicron variant	(due to emergence of Omicron variant/	activities only for asymptomatic or pauci-	(due to emergence of Omicron variant)	Omicron variant)
French guidelines		phase 1) 5 full days with negative nasopharyngeal	symptomatic persons without clinical respiratory signs of viral shedding (coughing,	5 full days with negative nasopharyngeal antigen test at D5 and in the absence	ıll days with negative nasopharyngeal antigen test at D5 and in the absence of
		antigen test at D5 and in the absence of clinical signs of infection for 48 h		clinical signs of infection for 48 h	ction for 48 h
People with an incomplete		Shortening of the duration of social isolation and occupational avoidance	ion and occupational avoidance		
vaccination scriedure and not vaccinated		7. It in days without testing it is clinical signs of SARS-COV-2 infection for 40 in Caution: for unvaccinated persons, an RT-PCR test must be carried out at D7 in	7 Iuli days without testing if the chimical signs of SARS-COV-2 fillection for 40 if Caution: for unvaccinated persons, an RT-PCR test must be carried out at D7 in the absence		
		of clinical signs of SARS-CoV-2 infection for 48 h	on for 48h		

longer took into account 20 ¹From February 2022 onwards, the isolation strategy for infected persons

and third dose as ^bTwo doses as primary vaccination

(Decision-making matrix 1) Adaptation of quarantine measures for contacts (People and Professional) according to the risk of destabilization of socioeconomic and health activities in TABLE 2 France

Phase 1 (Deficience personne) Phase 2 (December 2021) Phase 3 (January 2022) 2002 * Phase 5 (December 2021) Phase 5 (December 2021) Phase 6 (January 2022) 2002 * (March 2022) Phase 5 (December 2021) Phase 6 (January 2022) 2002 * (March 2022) (March	rialice					
November 2001) National guidelines before Establishment of a quarantine due to the emergence of the emergence of the Omicron variant with exemption for essential activities only 5 full days from D0° with negative RT-PCR test or with negative nasopharyngeal antigen test If symptoms suggestive of SARS-CoV-2 infection occur, a diagnostic antigen test should be performed. For contacts outside the home: - A quarantine of 5 full days after the last dated PCR test at the end of these 5 days. The quarantine negative and in the absence of clinical signs s infection (or 7 days quarantine without test if 1 signs suggestive of COVID-19 appear: see PSARS-CoV-2 infected persons. - For contacts within the home: - A quarantine of 7 full days (corresponding to contamination taking into account the 48 h of expression of the family case) from the date case(s) or from the onset of clinical signs in the case(s) or from the onset of clinical signs in the SARS-CoV-2 infected persons. - If signs suggestive of Covid-19 appear, see PS SARS-COV-2 infected persons.		Contact persons (peoples ar				
National guidelines before Establishment of a quarantine due to the the emergence of the emergence of the Omicron variant the exemption for essential activities only omicron variant or with negative nasopharyngeal antigen test or with negative nasopharyngeal antigen test is should be performed. For contacts outside the home: A quarantine of 5 full days after the last dated PCR test at the end of these 5 days. The quarantine of 7 full days after the last dated PCR test at the end of these 5 days. The quarantine of 7 full days after the last dated procession (or 7 days quarantine without test if infection (or 7 days quarantine without test if a signs suggestive of COVID-19 appear: see P SARS-CoV-2 infected persons. For contacts within the home: A quarantine of 7 full days (corresponding to contamination taking into account the 48 h of expression of the family case) from the date case(s) or from the onset of clinical signs in the agains suggestive of Covid-19 appear, see P SARS-CoV-2 infected persons.		Phase 1 (before November 2001)	Phase 2 (December 2021)	Phase 3 (January 2022)	Phase 4 (February 2002)ª	Phase 5 (March 2022)
and For	People with a complete vaccination schedule according to the current French guidelines ^b	National guidelines before the emergence of the Omicron variant	Establishment of a quarantine due to the emergence of the Omicron variant with exemption for essential activities only 5 full days from DO ^c with negative RT-PCR test or with negative nasopharyngeal antigen test If symptoms suggestive of SARS-CoV-2 infection occur, a diagnostic antigen test should be performed.	Abolition of quarantine Strict and mandatory application teleworking if applicable Monitoring by nasal self-test at DO, ^c D2, D4 The first self-test is performed under the supervision of a health professional.	of barrier measures, limit Monitoring by nasal self-test at D2 and D4	ation of social contacts, Monitoring by nasal self-test at D2
	People with an incomplete immunization schedule and Unvaccinated people		For contacts outside the home: A quarantine of 5 full days after the last date PCR test at the end of these 5 days. The quarantine and in the absence of clinical signs sugastive and in the absence of clinical signs suffection (or 7 days quarantine without test infection (or 7 days quarantine without test is suffected persons. For contacts within the home: A quarantine of 7 full days (corresponding to contamination taking into account the 48 h of expression of the family case) from the date case(s) or from the onset of clinical signs in the A negative RT-PCR test for the lifting of the SARS-CoV-2 infected persons.	ed contact with a mandatory RT-rantine can be lifted if the test is suggestive of SARS-CoV-2 if unavailable). Part 1 of the decision matrix for the period at risk of f contagiousness without clinical of the positive test in the index ine case(s). quarantine. Part 1 of the decision matrix for another decision matrix for the decision matrix for another decision matrix for decision d		

^aFrom February 2022 onward, the monitoring by nasal self-test no longer took into account the vaccination status.

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^bTwo doses as primary vaccination and third dose as booster shot.

^cD0 being the day of notification of contact with a person declared positive.

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(Decision-making matrix 2) Adaptation of the strategy for conducting a microbiological test of a person without proven contact in Phase 1, depending on the circumstances and type place frequented TABLE 3 οę

	Guidelines for nasal self-testing ^a			
		Access to an establishment open to the public (EOP)	pen to the public (EOP)	
	Family/friendship meeting	Professional activity	Other activities (e.g., cultural, sports, etc.)	EOP where masks cannot be worn and ventilation is not optimal
People with a complete vaccination schedule according to the current French guidelines	Self-testing	No testing if the conditions for measures are met	No testing if the conditions for compliance with the barrier measures are met	Use of a gauge (limitation on people participation)
Person with an incomplete immunization schedule	Self-testing possible at every meeting outside the family home if one of the people present is at risk of a severe form	Self-testing 2 or 3 times a week Work arrangements or teleworking	Self-testing at each attendance and Use of a gauge and self-test application of gauges or closures	Use of a gauge and self-test
Unvaccinated person	Access strongly discouraged	Telework for job categories that allow it	Telework for job categories Access strongly not recommended that allow it	

took into account the vaccination status. proven contact no longer for person without ^aFrom February 2022 onward, the guidelines for nasal self-testing

- viral excretion such as coughing and sneezing, for essential activities;
- suspension of quarantine for validly vaccinated contacts and professionals conditional on routine self-testing (the first of which is supervised by a health professional). By extension, this mode of control can be applied to unvaccinated children to keep schools open.
- Phase 4: It corresponds to the very important diffusion of the Omicron variant in the general population in January 2022, which led to very high incidence rates in all age categories and in all family, professional or public environments, including in vaccinated persons. However, the Omicron variant was associated with a lower severity of infection in individuals and a low impact of the epidemic on adult and pediatric hospitalizations for Covid-19 (with however a particular attention of the evolution of the number of PIMS or pediatric multi-systemic inflammatory syndrome). This phase also correspond to an increase in vaccination coverage in France and the maintenance of high compliance with barrier measures in the general population, particularly among people over 65 years of age.
- Phase 5 corresponds to a sharp decline in the incidence of cases at least by February 2022 and a further reduction in nasal selftesting surveillance measures for contacts. Isolation measures for positive patients remain the same. The French Government decided in mid-March 2022 to also remove the requirement to wear a mask in places subject to the vaccination pass, except in hospitals and transportation.

The decision to specifically adapt different sectors of activity and to implement measures for these five phases according to the social, economic, and health situation is a decision of the health authorities and the government based on indicators predefined at the political level. These indicators should be based on those used in particular for white plans, namely hospital tension (emergency room visits and capacity, resuscitation and critical services filling rates), but also the incidence rate and hospitalization rate of people infected with SARS-CoV-2, the rate of absenteeism in essential activities, the adequacy of existing healthcare staff and hospital capacity, disturbing disruptions in daily life and public transport and road transport, roads, public administrative services, judiciary, prison sector, police, fire brigade, and so forth. The HCSP considers that it is difficult to provide numerical values or specific dates for these indicators to classify these five phases and recommends that authorities rely on databases provided by different national institutions or agencies.

The HCSP insists on the fact that an adapted communication strategy towards the population and professionals must imperatively be defined to explain the stakes of the health situation and to accompany the new guidelines concerning the isolation of people infected by the SARS-CoV-2 virus and the quarantine of contacts. Particular attention must be paid to those who are furthest from the health system or the most disadvantaged to help them implement these guidelines. Each measure proposed by the HCSP, in terms of

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reducing the duration or even dispensing with social isolation or professional eviction measures, must take into account the vaccination status of the persons or professionals concerned and the type of public buildings frequented. These measures must imperatively be taken in addition to the use of teleworking whenever possible, the vaccination schedules in force including the booster and the simultaneous application of the seven barrier measures of the HCSP doctrine. This is particularly important for the correct wearing of masks in indoor spaces but also outdoors during high density of people (gatherings) with defined maximum capacity gauges for particular places or events. Mask wearing may be made mandatory again by policy decision in outdoor areas. Ventilation strategies are also necessary in public buildings and places of socioeconomic activity. 15,16

The HCSP's matrix 2 (Table 3) proposes strategies for adapting surveillance of the occurrence of contamination detected by nasal antigenic self-testing in people with no proven contact but who wish to visit friends/family members or establishment open to public. The proposed strategies take into account the specificities of these places and the vaccination status of the persons.

CONCLUSION

These measures take into account the epidemiological situation known to date and the data relating to the Omicron variant in terms of transmissibility, contagiousness, virulence, vaccine immune escape, the performance of antigenic tests for the detection of the Omicron variant of SARS-CoV-2 and the impact on the hospital system and more generally on the healthcare system.¹⁷

These two decision-making matrices have been developed as part of a gradual risk management approach to adapt prevention measures to the epidemiological situation but also to the risk of destabilizing the French country's social, economic and health activities. They are evolving and will have to be adapted in the near future, either in the sense of reinforcing or reducing them in relation to the current situation.

HIGH COUNCIL FOR PUBLIC HEALTH (HCSP) WORKING GROUP

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AUTHOR CONTRIBUTIONS

Didier Lepelletier: conceptualization; data curation; investigation; methodology; project administration; resources; supervision; validation; visualization; writing-original draft; writing-review & editing. Christian Chidiac: methodology; supervision; validation; writingreview & editing. Zeina Mansour: methodology; supervision; validation; writing-review & editing. Franck Chauvin: conceptualization; methodology; project administration; supervision; validation; visualization; writing-original draft; writing-review & editing.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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