The use of Smartphones to monitor the deconfinement of Covid-19 in France

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Strict containment has helped to curb the Covid-19 outbreak in France. The progressive deconfinement must be followed with great care to detect a possible resurgence, while continuing the indispensable barrier measures. As soon as tests (PCR) to detect the virus are widely available, it is envisaged to systematically detect all persons presenting symptoms of Covid-19.

In order to stop the circulation of the virus, it is proposed to identify the contact subjects of contagious patients and to isolate them as soon as possible. Their identification can be helped by artificial intelligence (AI) applications such as *StopCovid*. Indeed, these applications are able to detect via *Bluetooth* the people who have met a contagious patient at close range. Anonymity is expected to be respected within the strict framework of the European and national regulations of the General Data Protection Regulation (GDPR). Alerted, asymptomatic contacts could then be informed by text message, be screened by a PCR test, be taken care of as soon as possible and confine themselves.

This supposes that the patient tested positive agrees, on a voluntary basis, to declare himself positive and to disseminate this information to the users of the application they might have met. In the case of the *StopCovid* application, it is expected that there would be no request for personal data (civil status, telephone number, geolocation...). However, the anonymous geolocation data collected during this protocol could be used to monitor the evolution of the epidemic throughout the national territory. This statistical and anonymous data processing has been accepted by the French National Commission for Data Protection and Liberties (CNIL) (10 April 2020).

The contact tracing approach can be useful and effective by actively involving the population in the fight against Covid-19 on a voluntary basis. However, this effectiveness presupposes compliance with a certain number of ethical and legal conditions:
  - The chosen application must imperatively respect the European regulation, the GDPR and the CNIL recommendations.
  - The tracing effectiveness will depend to a large extent on the acceptance and confident adherence of the population to this intrusive approach. The usefulness of the system will largely depend on the level of participation. A broad communication must be disseminated, with an accurate, factual information, understandable by all and fair (with particular reference to the experiences of other countries). This application should not be imposed in any way, particularly by employers.
  - Biases will appear in the representativeness of the data collected: (1) a large part of the population does not have a smartphone; (2) another part will refuse to subscribe to its use; (3) there are many white areas, thus a territorial inequality. Finally, the four main operators must be mandatorily involved in the tracing process.
  - The informed consent of individuals, confidentiality and preservation of privacy must be ensured, by sticking to the only data essential to the objective, ruling out any other irrelevant information. It is also necessary to guarantee, on the one hand, the short-term destruction of

data throughout the epidemic, which may be prolonged, and, on the other hand, the freedom of choice for individuals to initiate or stop the tracing connection at any time.

- The very simple ergonomics of tracing must be adapted to vulnerable, elderly, isolated and precarious people, in order to avoid the digital divide, a source of segregation and inequity. Assistance by volunteers or professionals must be envisaged to enable some people to adhere to tracing in full understanding.

- Responsibilities that could concern damage suffered by a contamination or exposure related to a false negative of the test or the display of its result, or to a defective or inoperative technical transmission because in an area not covered by the operators, must be settled as well as possible. If such incidents occur, and in order to allow the widest possible public acceptance of the system, an automatic compensation mechanism should be provided for, through national solidarity and the Oniam (National Office for Compensation of Medical Accidents).

The Academy gives a favourable opinion on the use of Smartphones for monitoring deconfinement, suggesting that there should be an evaluation of its use after one and two months, with points on the results, and that the authorisation of this application should be provisional with a deadline to avoid any perpetuation of a system.