

SGMI-MENTOR – Proximity Tracing

Background

In the context of the SARS CoV-2 pandemic, various tools are being discussed that may be useful in the epidemiological control of the spread of the disease. These include (as a supplement to the instructions recommended for all persons, such as social distancing, hygiene measures, etc.) also measures that enable consistent identification and isolation of contact persons to infected/sick persons. In addition to the classic, personnel-intensive tracing of contacts of infected patients (auxiliary persons identify remembered contacts, call them by telephone and recommend self-isolation and, if necessary, further diagnostics), digital aids - known as proximity tracing apps - are increasingly used and tested.

From a medical informatics perspective, the use of such a proximity tracing app must be promoted for the reasons given below, provided that national requirements (e.g. FOPH/BAG recommendation, legislation (probably June 2020)) are met. It must be emphasised that it is not a replacement of the classic contact tracing, but rather a supplement to it.

Assessment of the use of proximity tracing (via App)

- Conventional contact tracing quickly reaches the limits of feasibility and financial viability, especially for contacts that are not remembered, but also for a high number of infected persons. These gaps can be efficiently filled by proximity tracing.
- Proximity tracing is much more agile and enables faster interventions than traditional contact tracing. Especially in a disease like CoViD-19, where there is evidence that many infections are transmitted in the pre- and early symptomatic phase, the time factor plays an enormous role. The faster contact persons can be isolated, the sooner further infections can be prevented and thus the reproduction rate reduced. A digital solution may be days faster in alerting contact persons, which can be an invaluable advantage.
- We are by no means familiar with all the people with whom we have daily contact. Nor do we remember all the contacts we had during the day that could have been potentially dangerous, not least because the close contacts can also be out of sight. Proximity tracing is easily able to close this gap.
- Depending on the design of digital solutions, data protection issues are a bigger problem. However, all negative examples of inadequate data protection and the enforcement of follow-up measures (often from authoritarian states) should not obscure the fact that the applications developed/operated for use in Switzerland are exemplary in terms of the protection of privacy (anonymous, decentralised data storage) and its use is voluntary (opt-in). According to the current state of knowledge, the use of such an app can be recommended without any relevant concerns (the basis for this argumentation is the "Swiss PT App" model of the Decentralised Privacy-Preserving Proximity Tracing (PT³C) Consortium).
- The course of the current pandemic (possibility of a second wave, unclear situation regarding re-infections, unclear situation regarding vaccinations, low rate of infestation) is difficult to predict. Accordingly, both longer phases of low activity and phases of rapid spread must be expected. Here, too, there is a need for the possibility of (re)starting tracing activity quickly and at any time, which would be limited by traditional contact tracing and could only be achieved by means of a large amount of data.

Limits of proximity tracing

Of course, digital proximity tracing can only contribute to successful epidemic containment in combination with existing analysis and containment methods. Limits must be located in particular in the following cases:

- The usage rate will primarily determine how successfully proximity tracing can be implemented. Currently it is assumed that at least 60% usage is necessary for a very good result to be achieved. The app is already useful at a lower usage rate, but the benefit increases disproportionately with increasing distribution. Accordingly, measures are necessary to promote the usage rate as much as possible.
- Proximity tracing requires availability (use of a smartphone, installation of an app) but also constant use of the smartphone. In addition, the (voluntary) reporting of a positive test result is decisive for the success of the implementation. User compliance will determine how good the benefit of such a solution is.
- Bluetooth connections (automatically activated by the app) are on the one hand a strain on the device's battery (Android and Apple in particular promise deep integration into their operating systems, so that this problem is reduced), and on the other hand theoretically also a danger for cyber-crime attacks (e.g. blueborne malware).
- Increased carrying along the smartphone (especially in the everyday life of health care professionals) can lead to an increased deposit of viruses/hospital germs on a device, provided that the device is effectively touched repetitively. Hygiene rules and the regular use of surface disinfectants, such as those used for screens / laptops, are correspondingly important.

Recommendation from the SSMI perspective

- 1) The use of proximity tracing should be actively encouraged.
- 2) As soon as an appropriate solution is available, awareness should be raised very quickly with proactive recommendations for using the app. The health, economic and personal benefits (e.g. freedom of movement in a second wave) should be given far greater weight than concerns about the exemplary data protection design of the planned application.
- 3) Recommendation to update the smartphone operating system to the latest version in advance (possibly security relevant).
- 4) Recommendation to use the app also during work - also in health care - in a work environment where mobiles are not generally prohibited (smartphone in clothes, if possible no touching of the smartphone during work, regular disinfection). Excluded from this recommendation are pure Covid 19 wards in hospitals.
- 5) Encourage rapid reporting of positive test results, including incentive systems
- 6) Early sensitization of staff and the population that the use of the app might be necessary on a cyclical basis (active use followed by a period in which use no longer makes sense, followed by resumption of use).
- 7) A long legislative or regulatory process should be avoided in the interest of rapid usage.