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FINLAND

OMAOLO WEB-BASED COVID-19 SYMPTOM SELF-ASSESSMENT TOOL

BACKGROUND

Omaolo, a web-based COVID-19 symptom self-assessment tool, was part of Finland's national response to the first wave of the COVID-19 pandemic. The tool was developed in collaboration with the Finnish Institute for Health and Welfare (THL) and a consortium of private-sector entities.

Thanks to the collaborative efforts of several companies, Finland was able to quickly scale up existing infrastructure. This facilitated the country's ability to meet the increased demands resulting from the pandemic. These companies jointly had the required capacities to develop a web-based symptom-checker questionnaire, structured questions and an intelligent algorithm to run the personalized profiles, and to give medically qualified recommendations in common language for each questionnaire. Omaolo was successfully launched in six days on 16 March 2020.

Symptom checkers such as Omaolo are a cost-effective method of enabling rapid epidemiological, population-level data collection and analysis. As



such, Omaolo helped Finland to better understand its epidemiological situation and improved its ability to predict and prepare the health system for the new waves of the pandemic.

Furthermore, symptom checkers clear time for people to consult professionals face to face for other reasons, especially in situations where time and contacts are limited. In short, these digital tools may be used for prioritizing and allocating resources to their most appropriate use cases.

THE TECHNOLOGY



Omaolo records COVID-19-related symptoms. Based on the reported symptoms, it provides users with personalized recommendations using the most up-to-date scientific evidence and nationally determined criteria.

The symptom-checker log files of the Omaolo service are also incorporated into the national COVID-19 surveillance datasets. The data are transferred daily to THL for further analysis, and form the basis of the public-facing COVID-19 dashboard. The dashboard displays information from cases

in which the service, on the basis of the reported symptoms, recommended the user to contact health-care services, or from cases in which the respondent reported the selected symptom.

All responses submitted through Omaolo are recorded into DigiFinland Oy's system log files and are authenticated by strict measures to protect

patient confidentiality. The respondent decides if the responses containing personal identification codes are recorded, and if their responses will be shared with their local primary health care centre.

Omaolo is a CE-marked medical device that is free to use and is available in Finnish, Swedish and English languages.

IMPACT

The Omaolo service has helped to decrease the number of visits to emergency services as the Finnish public has used the web-based tool to assess their COVID-19 symptoms instead of visiting primary or emergency care facilities.

During the second wave of the pandemic (June 2020 to January 2021), 1.72 million questionnaires, representing 30% of Finland's population, were submitted. COVID-19 symptoms were recognized in 1.55 million replies. Close to 15%, or 245 500, were directed to seek emergency medical care based on their responses to the online screening questionnaire, though it is not known if users of the Omaolo service followed the recommended actions (Jormanainen & Soininen, 2021).

A recent study published by Jormanainen and Soininen (2021) found Omaolo to be well received by the public and regularly used to assess COVID-19 symptoms. This study also showed that the Omaolo service is more commonly used by younger generations, most likely due to their high digital literacy and conventional habits of using digital apps. This highlights the importance of evaluating the effects of and understanding the implications of digital tools on equity in access to health services and how people with fewer digital skills can be supported.

KEY LEARNING

- **Due to its modern infrastructure and existing health information systems, Finland was able to quickly scale up its surveillance system. The required capabilities and capacity were in place, minimizing the time needed for an early launch of the solution.**
- **Established partnerships enabled the rapid development and implementation of new digital tools during the COVID-19 pandemic. Hence, developing partnerships during non-emergency periods is key.**
- **Monitoring for inequalities is important to understand how to reduce the digital divide.**

MORE INFORMATION

Omaolo web-based COVID-19 symptom self-assessment tool (available in Finnish, Swedish and English): [Omaolo.fi](https://omaolo.fi)

Confirmed coronavirus cases (COVID-19) in Finland: <https://experience.arcgis.com/experience/92e9b-b33fac744c9a084381fc35aa3c7>

REFERENCES

Jormanainen V, Soininen L (2021). Use and users of the web-based Omaolo Covid-19 symptom self-assessment tool in Finland since March 16, 2020. *Stud Health Technol Inform.* 281:739–43. doi:10.3233/SHTI210270.