



State Comptroller Of Israel | Special Report: The State of Israel's
Coping with the Covid-19 Pandemic | 2021

Welfare, Education, Health and
Employment Topics

Epidemiological Investigations to Break the Covid-19 Infection Chains



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Background

Epidemiological¹ investigations trace people who contacted a person identified as infected with the disease (an infected person or a confirmed case²). Therefore, they can catch the disease from him, thereby continuing the infection chain. The cumulative outcome of epidemiological investigations helps provide an updated assessment of the scope of infection, its dispersion, spread, and outbreak hotspots. This information is vital to decision-makers for establishing a policy to eradicate the epidemic. The investigation system operates routinely in the district health offices of the Health Ministry. Following an epidemic outbreak, this system is a significant element in containing the epidemic and breaking the infection chains before they become uncontrollable. In the first months of the Covid-19 pandemic outbreak – March to July 2020 – the Health Ministry operated the epidemiological investigations system mainly through the district health offices. In August 2020, with the spread of the pandemic, the IDF's Home Front Command (HFC), in collaboration with other bodies in the security system, the Ministry of Health, the Ministry of Education, and the local authorities, established a command center (the Alon Command Center). The Alon Command Center assisted the Health Ministry in breaking the infection chains by shortening the necessary time investigators required to identify confirmed cases, trace people with whom they came into contact (the contacts) and instruct the contacts to self-isolate.

1 Epidemiology – A branch of medicine and biology dealing with the study of diseases in populations.

2 A confirmed case is a person diagnosed as carrying the pandemic virus, i.e. the covid-19. An infected person is someone who has developed symptoms of the disease. In this audit, the word "infected person" refers also to confirmed cases.




Key figures





Approx. 671,000	Approx. 3,000	Approx. 4,500	5–12 hours instead of 2 hours
epidemiological investigations were completed out of 720,000 confirmed cases between September 1, 2020, and April 15, 2021	interviewers were employed at the peak of activity of the epidemiological investigations system (November 2020)	out of 720,000 confirmed cases between September 1, 2020, and April 15, 2021, did not cooperate in the epidemiological investigation. Only one case of non-cooperation was forwarded to the police for investigation	by the end of January 2021, the Alon Command Center set a target of two hours on average from receiving a positive test result until commencing the epidemiological investigation. The actual time was 5 to 12 hours
10, 4, 50%	28% instead of 33%	48% (287,566 confirmed cases)	4, 4.6, 6.4
the targets set by the Command Center until the end of 2021: tracing of 10 contacts; location of 4 places visited by an infected person; and identification of the source of exposure to confirmed cases in 50% of investigations	not more than 28% of infected persons in moderate or severe medical conditions were identified as close contacts by the investigators before being confirmed as Covid-19 cases. The goal was 33% of all infected persons in that condition	48% out of 598,207 confirmed cases were previously identified as contacts of confirmed cases in epidemiological investigations or through mobile phone tracking by the Israeli Security Agency from the start of the assistance activities until 27.1.21	local authority interviewers performed approximately four investigations per day, 4.6 by IDF interviewers and 6.4 by Health Ministry interviewers (in January 2021)



Audit Actions

 From November 2020 to February 2021, the State Comptroller's Office carried out a follow-up audit of the epidemiological investigations system. The audit examined the operation of the investigations system and the use of computerized systems to perform the investigations; the efficiency and effectiveness of the investigations system, including as compared with the Israeli's Security Agency assistance activities; and the roster of epidemiological interviewers. The audit was conducted at the Ministry of Health and the Alon Command Center of the Home Front Command. Supplementary audits were performed at the Ministry of Education, the Local Government Center, and several local authorities. Selected data were updated as of April 2021. This audit report is a follow-up report to the interim report issued by the State Comptroller's Office in 2020 on "Epidemiological investigations to break the chains of Covid-19 transmission – interim findings ahead of a special report to be issued in 2021".

Key findings

-  **Elapsed time from receiving a positive test result until initiating an investigation** – From November 2020 to April 2021, the time that elapsed from receiving a positive test result until commencing an investigation was (on a weekly average) between 5 to 12 hours. As for the period until February 2021, this is a deviation from the target specified until this time – 2 hours.
-  **On-line form for self-contact tracing** – The introduction of the online form for self-contact tracing was unsuccessful.
-  **Percentage of investigations completed out of all confirmed cases** – As long as the number of new confirmed cases did not exceed 3,000 per day, the percentage of completed investigations was not less than 95%. However, when the infection rate passed 3,000 new confirmed cases per day, the percentage of completed investigations began to decline, falling to 89% at the peak of infections in January 2021. After that, the percentage of completed investigations rose again with the drop in infections.
-  **The number of contacts for tracing in the epidemiological investigations** – The Alon Command Center set, until February 2021, a minimum threshold of 10 contacts to trace in the investigations. In October 2020, the investigations system met the target in 5% of cases. The rate increased to 20% by mid-December and decreased to 8% at the



end of January 2021. After reducing the target to six contacts in February 2021, the Alon Command Center adhered to the target³.



Identifying exposure (infection) sources in the epidemiological investigations

– From November 2020 to mid-January 2021, the Alon Command Center did not meet the target of identifying the infection sources – in 50% of the investigations. However, the target was nearly achieved in specific periods – the investigators identified the sources of exposure in 47%–48% of the cases.



Locating places visited by infected persons

– The investigators hoped to discover four sites visited by infected individuals by January 2021. From September 2020 to January 2021, the investigators located between 0.5 and 3.6 places. Thus the Alon Command Center did not achieve its target.



Cooperation of confirmed individuals with the investigations

– Some 4,500 infected individuals did not cooperate with the investigation. Given the requirement to trace at least ten contacts, those 4,500 persons may have infected thousands to tens of thousands of others, thus increasing the morbidity rate. A national cabinet of experts recommended possibly requiring those investigated to affirm the accuracy of the information they provided. The Ministry of Health should give the individuals that do not cooperate with the investigation a clear explanation of the impact of incorrect responses on the morbidity among those near them. The Ministry of Health neither discussed nor decided whether to adopt the recommendation. Only in one case of non-co-operation did the Health Ministry pass the information to the police for investigation.



Percentage of infected individuals hospitalized in moderate or severe condition and identified as close contacts before receiving a Covid-19 diagnosis

– During the audit period, there was an overall increase in the percentage of infected persons hospitalized in moderate or severe condition and identified as close contacts before receiving a Covid-19 diagnosis – from 8% in September 2020 to 19% in March 2021 and peaked at 28% in February 2021. The target set by Alon Command Center has not been achieved (30% in January 2021 or 33% in February 2021).



Transfer of essential information about infection rates between the Health and Education Ministries

– From the pandemic outbreak until mid-March 2021, the Health Ministry did not have online access to Education Ministry data on infection rates among students and teaching staff. The main reasons for this were ensuring information security and protecting the students' and teachers' privacy. The Health Ministry thus was unable to promptly identify outbreaks at a school or several schools in the same local authority or adjacent ones.



Public release of the investigation results

– The Health Ministry did not establish a policy for the public dissemination of epidemiological inquiries (investigations of

³ The figures include an analysis of 70% of the investigations performed.



significant outbreaks). Only the Alon Command Center received the inquiry results. On November 25, 2020, the cabinet of experts recommended, for the first time, that the Health Ministry keep the public regularly informed about the results of such inquiries. However, as of February 2021, no results had been released to the public.



Use of the Magen app – The Magen app enables tracing of persons who were in contact with confirmed cases and are liable to be infected. The app did not meet expectations and was underutilized. The public downloaded only 976,238 copies of the app.



Investigations in which no contacts were identified – The percentage of unsuccessful investigations (no contacts were identified) decreased from 11% in mid-September 2020 to 1% at the end of November 2020. It remained at this rate until April 2021. This indicates an improvement in the ability to trace contacts.

Development of technological capacity to identify infection hotspots – The state comptroller's office commends the establishment of a special task force (special outbreak task force) for analyzing the information obtained from epidemiological investigations and the use of technological means by the Health Ministry and the Alon Command Center to gather the information on confirmed cases collected from the various systems. All this is to improve and break the Covid-19 infection chains more efficiently.

The number of epidemiological investigations by interviewers (daily average) – The daily number of investigations performed by Health Ministry interviewers exceeded those of other interviewers. From December 2020 to the middle of January 2021, there was an increase in the daily average number of investigations performed in all the investigation systems, in parallel with the number of confirmed cases. Local authority interviewers improved from 1.8 to 4 investigations daily, and Health Ministry interviewers enhanced from 2.3 to 6.4 investigations daily. IDF interviewers increased the daily average of investigations from 1.8 as of the end of December 2020 to 4.6 in mid-January 2021. After the infection rate peaked in mid-January 2021, Ministry and IDF interviewers' daily investigations decreased.



Key recommendations



It is recommended that the Ministry of Health preserve the current epidemiological investigations system now and in the future so it can be activated upon an epidemic outbreak.

Recommendations for the Home Front Command (Alon Command Center) and the Ministry of Health:

- To evaluate tools to track potential sources of exposure and infection to achieve the established target. Including considering using dedicated technological tools after they have been examined as well as from the legal aspect, in addition to enhancing the capabilities of human contact tracers. These improvements are essential not only for breaking the infection chains and protecting the public's health but also for drawing lessons and making decisions regarding the continued operation of the different sectors of the public realm – for example, the education system, fitness rooms, and mass events and gatherings such as weddings and prayer meetings.
- As epidemiological investigations have limited efficiency and effectiveness when infection rates and morbidity are high, it is recommended to examine tools that facilitate rapid quality investigations in a higher percentage of new confirmed cases.
- To complete examination of factors that prevented efficient use of the online form for self-contact tracing. The online form should be simplified and made easy to use, and a cellular phone application should be developed. In addition, to encourage using the online form, the public's views on methods to increase the incentive to use the form should be evaluated. Increased use of the form could be helpful, especially in periods with high morbidity rates, when there may be an extended delay in commencing an investigation.
- To draw lessons based on the extent to which the epidemiological investigations system has met the criterion of effectiveness, to formulate achievable targets which will serve as a basis for generating data for future decision making in the event of an epidemic outbreak, while also considering steps to increase the efficiency of the investigations system.
- The Even Yesod system's⁴ continued availability and proper functioning (or another system, if developed) must be ensured in routine times. This will enable the continued operation of the investigations system during the Covid-19 pandemic and future epidemics. Consequently, it is recommended to determine which components of the Even Yesod system should be retained, including the entity's identity, which will maintain the system and develop new capabilities. These capabilities include interfaces with other government data systems. Additionally, a

⁴ Even Yesod – a web service system developed by the Ministry of Health which is intended to configure with software systems and obtain services from such systems.



support and update system should be operated alongside the Even Yesod system to ensure its availability and suitability in the future.

- To determine the structure and scope of the epidemiological investigation systems in routine times and in times of emergency according to quantitative and qualitative performance analysis, and considering current and changing circumstances.



It is recommended that the Ministry of Health examine necessary steps in cases where confirmed individuals do not cooperate in epidemiological investigations. Including considering the recommendation of the national cabinet of experts on this subject.



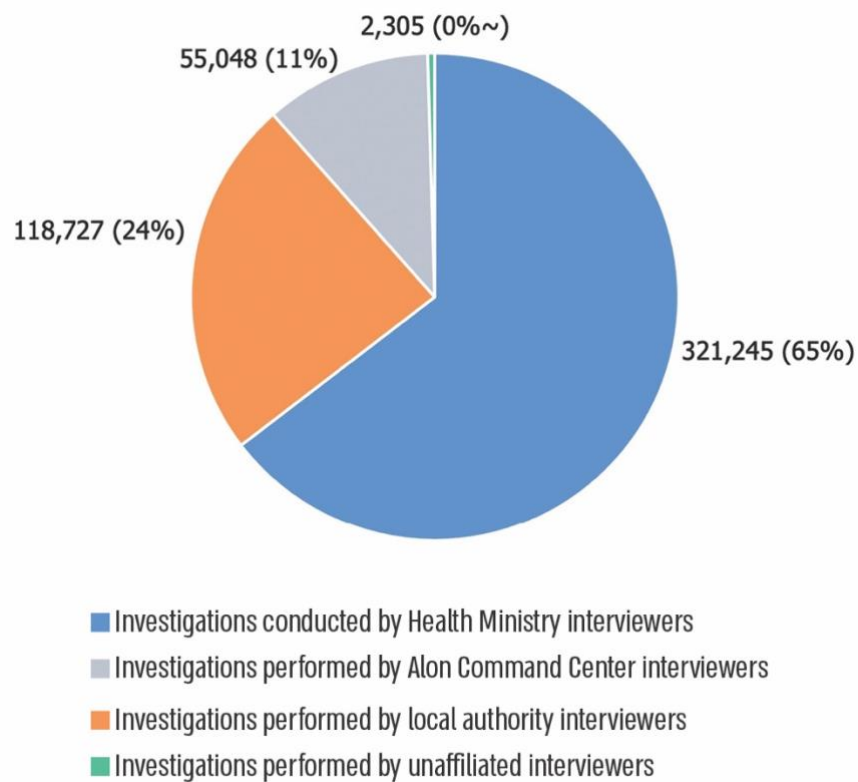
It is recommended that the Corona Cabinet decide on an enforcement policy to encourage cooperation in epidemiological investigations and instruct the Ministry of Health and the Israel Police to act by that policy.



It is recommended that the Ministry of Health and the Israeli Security Agency analyze output figures showing the number of contacts and confirmed cases identified in investigations by human contact tracers and Israeli Security Agency assistance activities. Among other things, they should consider the effect of infection rates on results achieved by human contact tracers and by Israeli Security Agency phone tracking. They can determine from this information the potential contribution of each method in tracing contacts with confirmed cases.



Number of investigations performed from November 2020 to April 2021, broken down by investigation systems (Ministry of Health, Home Front Command, and local authorities)



Health Ministry and Alon Command Center data, adapted by the State Comptroller's Office.



Summary

An epidemiological investigations system is a significant element in epidemic prevention and containment and breaking the infection chains of transmission before they become uncontrollable. To improve the efficiency of the national investigations system, both in response to the still ongoing covid-19 pandemic and to address future needs, should they arise, it is essential for the Ministry of Health, the Alon Command Center of the Home Front Command, and all other relevant bodies to work efficiently, each in its field and also to collaborate to rectify the deficiencies raised in this report.