

The concept of the canton of Zug for the second wave of COVID-19 in Switzerland

[Das Konzept des Kantons Zug für die zweite Welle von COVID-19]

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In spring 2020, the first wave of the COVID-19 pandemic hit Switzerland. After case numbers had fallen again, responsibility for fighting it reverted to the cantons. In Zug, the Directorate of Health developed an alert system and intervention concept which was acknowledged by the government of the canton in late June 2020.

The COVID-19 pandemic is a great challenge for many countries including Switzerland, a multicultural and federalistic country of 8.6 million inhabitants. Here, public health is generally the responsibility of the 26 cantons or states, ranging in population size from 16'000 in Appenzell Innerrhoden to 1.6 million in Zurich. The canton of Zug has 128'000 inhabitants.

At the beginning of the first wave of COVID-19 in March 2020, the Federal Council as the government of Switzerland declared an 'extraordinary situation' in terms of the Federal Epidemics Act. This gave it the authority to impose travel restrictions, deploy members of the armed forces in support of the health care system and border control and to impose a partial lockdown for the entire country of Switzerland. New cases reached a peak in late March (see illustration 1), deaths due to COVID-19 one week later; both receded continuously in the following weeks. The first restrictions were lifted again in late April, and in the middle of June 2020, the "extraordinary situation" formally came to an end and changed to the "particular situation" with limitations to the authority of the federal government.

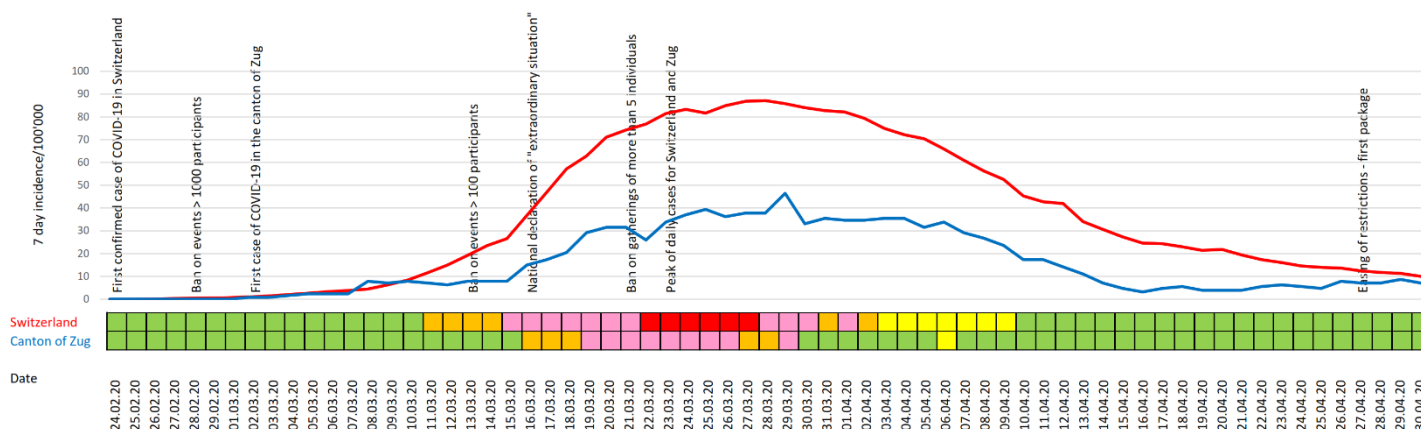


Illustration 1. 7 day-incidences for COVID-19 in Switzerland and in the canton of Zug during the first wave of the pandemic, including post-hoc application of the alert levels.

This meant that now again the cantons were primarily in charge of managing the COVID-19 pandemic. This also included the responsibility to decide about the implementation of measures at the local level and to coordinate with other cantons as well as with national partners. The federal government still had the possibility to implement measures, but only after consultation with the cantons. The goal of public health action in spring 2020 was to protect the public in terms of morbidity and mortality, and decisive measures were taken. They were successful in slowing and reverting the spread of the virus, but they also had drastic effects on society. For the further course of the pandemic, the objectives were not only to protect the public and to maintain the functioning of the health care system, but to do so with less extreme and less disruptive measures.

In order to react to developments in a timely and appropriate fashion, a monitoring system is essential. The alert system of the canton of Zug focusses on the number of confirmed cases of the disease as the most rapidly available indicator. An analysis of the data in the first wave of COVID-19 in Switzerland by the Swiss Federal Office of Public Health has shown that this was the case on average 6 to 7 seven days after the onset of symptoms or 11 to 13 days after the time of exposure to the virus. Data on hospitalisation were available about 2 days later.

Table 1. The COVID-19 alert level concept of the canton of Zug. The levels are based on the number of new confirmed cases accumulated over the last 7 days and on the extent of the change in comparison with the previous 7 day period. All numbers can be calculated from publicly available data.

Incidence	>75/(100'000*7d)	orange	red	red	red
	50-75/(100'000*7d)	yellow	orange	red	red
	25-50/(100'000*7d)	green	yellow	orange	red
	10-25/(100'000*7d)	green	green	yellow	orange
	< 10/(100'000*7d)	green	green	green	green
		<0 (decrease)	0-10% Increase	10-20% Increase	>20% Increase
		Change in comparison with previous week			

The alert system of the canton of Zug uses both the level of new cases of COVID-19, expressed as the 7 day incidence per 100'000 inhabitants, and the velocity of change (table 1). This allows the comparison of the situation in areas of different population size. It provides a quantification

of the dynamics of the development as does the effective reproduction number R_e or R_t , but it does so without the use of modelling techniques and based entirely on publicly available data and simple calculation techniques. The threshold values for the different alert levels (10, 25, 50 and 75/100'000 for the 7 day incidence; 0, 10% and 20% for change in comparison to the situation one week ago) were defined after analyses of the data of the first wave (illustration 1), simulations for the canton of Zug and further cantons and after discussion with other experts. The 50/100'000 threshold in particular was inspired by the corresponding local intervention threshold already established in Switzerland's neighbouring country Germany. The length of the reference period of 7 days was discussed in detail, but finally chosen as a compromise between its sensitivity to change and its stability with regard to reporting distortions, for example over the weekend. By adding up the 7 day incidences from two consecutive weekly intervals, the 14 day incidence often used in international comparisons can easily be derived.

The rapid changes in the alert levels during the first wave of the COVID-19 pandemic (illustration 1) show that they cannot be used to automatically trigger specific public health measures. However, the system provides health authorities with meaningful indications for measures to be prepared and to be considered. This includes adaptations in the test, trace, isolate and quarantine system as well as in the health care system, but also the health policy measures as summarised in table 2.

	Types of measures	Alert level green	Alert level yellow	Alert level orange	Alert level red
Collaboration beyond canton	Collaboration beyond cantons (incl. federal administration, other national partners)				x
	Collaboration with neighbouring cantons			x	x
	Exchange with neighbouring cantons		x	x	x
Popul. based interventions	Comprehensive, blanket coverage interventions (e.g. bans on gatherings)				x
	Intervention in all settings based on specific intelligence (e.g. rules for face masks)			x	x
	Intervention in risk settings based on specific intelligence (e.g. restrictions on venues)		x	x	x
Communication	Intensified communication at the canton level		x	x	x
	Continuation of national communication (social distancing/hygiene)	x	x	x	x
Monitoring	Intensified observation of all settings			x	x
	Intensified observation of risk settings		x	x	x
	General monitoring of the pandemic	x	x	x	x

Table 2. The COVID-19 intervention concept summarises the types of health policy measures to be prepared and considered for the different alert levels.

The complete article has been published on 29 July 2020 in German in the Journal of the Swiss Medical Association. It describes the concept and its development. It also contains an overview of the decisional pathways and institutional responsibilities for specific public health interventions in the legal context of Zug and Switzerland.