

Trägerschaft: Schweizerische Gesellschaft für Pädiatrie (SGP) und Bundesamt für Gesundheit

## Application for a new study for the Swiss Paediatric Surveillance Unit

### 1. Studied disease

#### SARS-CoV2 infection in children in Switzerland

### 2. Investigators

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### 3. Summary

In late 2019 the first cases of coronavirus disease (COVID-19) were reported with subsequent rapidly spread worldwide. The outbreak was declared a pandemic by the WHO on March 11, 2020 and almost all countries worldwide have entered the first wave of the spread by April 2020. Models based on previous influenza pandemics, seasonal coronavirus prevalence, seasonal variation and infection control efforts suggest that a second peak will arrive in winter 2020/2021 with multiple waves thereafter and that there is a potential for the development into endemic seasonal COVID-19.

Despite more the 2 million currently infected individuals, data on severe acute respiratory syndrome coronavirus (SARS-CoV)-2 infection in the pediatric population is limited. The aim of the study is to systematically collect data from children admitted to hospital with SARS-CoV2 infection in Switzerland to: determine the epidemiology including the spectrum of the disease, severity, case fatality, risk factors and evolving treatment strategies.

### 4. Study start

1 April 2020 (with inclusion of cases from 1 March 2020)

### 5. Duration

Five years

### 6. Aim of the study

The aim of the study is to obtain epidemiological data of SARS-CoV-2 infection in children in Switzerland to be able to determine

- Demographic information (age, sex, ect.)
- Incidence rates (with age stratification)
- Clinical spectrum of the disease and disease severity
- Case fatality rate (with age stratification)
- Co-morbidities and risk factors for severe disease
- Intensive care and respiratory support
- Treatment approaches
- Disease outcome
- Transmission patterns

## 7. Background

In late 2019 the first cases of coronavirus disease (COVID-19) were reported with subsequent rapidly spread worldwide [1]. The outbreak was declared a pandemic by the WHO on March 11, 2020 and almost all countries worldwide have entered the first wave of the spread. Models based on previous influenza pandemics, seasonal coronavirus prevalence, seasonal variation and infection control efforts suggest that a second peak will arrive in winter 2020/2021 with multiple waves thereafter and that there is a potential for the development into endemic seasonal COVID-19. [2].

The disease is caused by a newly defined beta coronavirus called severe acute respiratory syndrome coronavirus (SARS-CoV)-2. It has a variable spectrum of disease ranging from asymptomatic/mild upper respiratory tract disease to acute respiratory failure but the existing data in infants, children and adolescents remain limited [3]. Reports from China, Spain and the United States, however, suggest severe cases and deaths occur in younger, previously healthy individuals [4-8]. Knowledge on co-morbidities and underlying risk factors predisposing to severe COVID-19 in children are currently lacking. In addition, the transmission potential in families is also unknown.

## 8. Methods

On notification of a case of SARS-CoV-2 infection by a paediatrician to the SPSU in the monthly report, the investigator sends out a questionnaire to the clinician via e-mail. The completed paper form is returned to the study centre via e-mail or in printed paper form. All data is rapidly transferred into an electronic database (RedCap). Alternatively, the reporting hospital can opt to directly fill in the data into an electronic reporting form which is linked to the RedCAP database. All data is anonymised and does not contain any identifiable information.

## 9. Case definition

Children < 18 years of age cared for at a Swiss hospital (admitted or not admitted) with confirmed COVID-19 by any of the below

- Detection of SARS-CoV-2 from a clinical specimen using a validated NAAT (PCR)
- Serological confirmation as defined by the federal office of public health (when serological testing becomes available)

## 10. Questionnaire

See attached

## 11. Reporting instructions

The paediatrician notifies the SPSU of any cases meeting the case definition in the monthly report. We kindly ask you the report number of admitted and non-admitted separately (total n and admitted n). From 1 November onwards 2020 the detailed questionnaire only needs to be filled out for admitted cases. The SPSU notifies the investigator, who sends the questionnaire to the reporting hospital. The paediatrician returns the questionnaire to the investigator.

## 12. References

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3. Castagnoli, R., et al., Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection in Children and Adolescents: A Systematic Review. *JAMA Pediatr*, 2020.
4. Lu, X., et al., SARS-CoV-2 Infection in Children. *N Engl J Med*, 2020.

5. Dong, Y., et al., Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China. *Pediatrics*, 2020.
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8. Sun, D., et al., Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study. *World J Pediatr*, 2020.