

COVID-19 FORSCHUNG IN ÖSTERREICH

Vom kleinen Datensilo zur modernen Registerforschung



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Thinking Digital Health Forward Foresight #9

Agenda

- Wichtige Fragen zur COVID-19 Pandemie
 - Ein paar Beispiele
- Verfügbare Daten (EMS Excerpt)
- Soll-Zustand (verknüpfte Registerdaten)
- *Falls Zeit:* Bonus Tracks
 - Datenschutz
 - Beispiel für moderne COVID-19 Forschung aus Schweden

Wichtige & spannende Fragen zur COVID-19 Pandemie

■ Ein paar Beispiele

- Wer wird (wann) krank?
- Wer hat einen schweren Verlauf?
- Wer muss auf eine Intensivstation
- Wer verstirbt?
- Wer leidet an "long COVID"?
- ...
- Wer verliert seinen Job?
- Wer nahm am Massentest teil?
In 2021:
 - Wer lässt sich impfen?

■ Sozio-ökonomische Determinanten

- Alter, Geschlecht, Herkunft
- Ausbildung & Beruf
- Familiensituation
- Einkommen
- Wohnort, Wohnsituation
- Arbeitsort, Arbeitssituation
- Schule

■ Medizinische Determinanten

- Vorerkrankungen
- Gesundheitsverhalten
 - * Übergewicht
 - * Rauchen
 - * Impfverhalten
 - * ...

Verfügbare Daten: Excerpt d. EMS



■ Pro

- Individualdaten

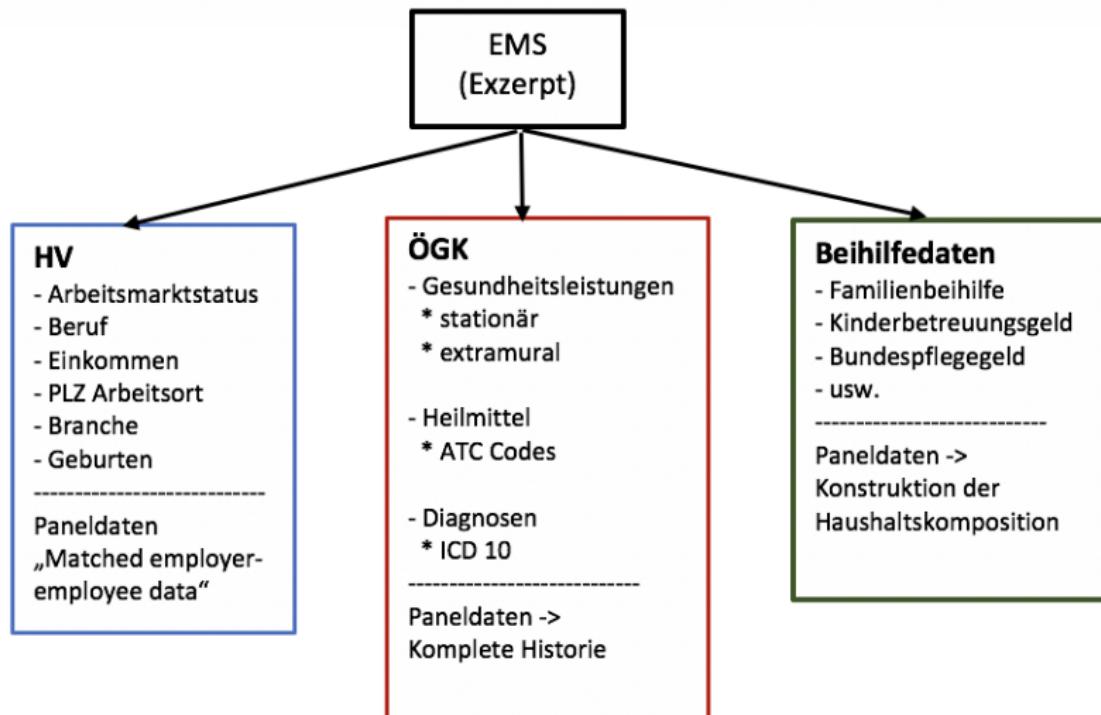
■ * 6 Variablen

- Alter
- Geschlecht
- Region
- Diagnosedatum
- Todesdatum
- Datum der Genesung

■ Contra

- Nur positive Tests
- Wenig Variablen*
- Datensilo(!)

Pseudonymisierte Verknüpfung mit administrativen Daten



Verknüpfung erhöht die Power der Daten

EMS ohne Verknüpfung



EMS mit Verknüpfung



Wissenschaft kann empirische Evidenz liefern & Fragen beantworten
!! Ohne extra Kosten !!

Erfahrung durch Pilotprojekt an der JKU Linz (2008-14)

The screenshot shows a website layout. At the top left is a logo consisting of two interlocking arches, one grey and one blue, with the text "labor&welfareSTATE" below it. To the right of the logo is the text "The Austrian Center for Labor Economics and the Analysis of the Welfare State". A vertical sidebar on the left contains links: Home (which is selected and highlighted in grey), Contact, Research Programme, Scientists/Scholars, Associated Institutions, Publications, Events, Research Seminar, Press, Vacancies, and Administrator. The main content area has a header "Home" and a sub-header "The Austrian Center for Labor Economics and the Analysis of the Welfare State". Below this is a paragraph about the National Research Network S103 funded by the Austrian Science Fund. The next section discusses labor market issues, population economics, and the welfare state. The final section describes the Austrian Center for Labor Economics and the Analysis of the Welfare State's role in research collaboration and international impact.

The Austrian Center for Labor Economics and the Analysis of the Welfare State

National Research Network S103 funded by the Austrian Science Fund

Labor market issues, population economics and the welfare state have been at the center stage in policy debates in many countries and empirical research in these areas has proven to play a powerful and constructive role in providing empirical evidence on issues such as unemployment, poverty, or the financing of health and retirement accounts. Nevertheless, in many areas the policy debate is continuing as there is no consensus about the available evidence, and new policy issues arise.

The Austrian Center for Labor Economics and the Analysis of the Welfare State represents an Austrian National Research Network pooling research efforts and allowing for close collaboration of researchers within and outside the country. By close coordination and collaboration it is intended to multiply the already available international impact of research and to arrive at policy conclusions. The Research Network represents a strong research center in labor, population and welfare economics with access to high quality data with the intention to attract international researchers to come to Austria and support the Austrian research base.

Intermediate report of the first funding period

Final Report April 2014

Analyse von Daten vom AMS, AUVA, BMF, BMSGPK, OÖGKK, HV.
Gefördert vom FWF, in Kooperation mit IHS, U Innsbruck, UWien & U Zürich

Danke für die Einladung & Aufmerksamkeit



■ Mehr Info:

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Überlegungen zum Datenschutz

- Pseudonymisierung
- Methoden: Target Record Swapping
 - Verschmutzung von “risky records”
- Definierter Nutzerkreis
 - Behörden & Ämter haben ohnehin Daten (sogar mit Klarnamen)
- Forschungsprojekte publizieren keine Individualdaten
- Gesellschaftlicher Nutzen vs. potenzielle Kosten (etwa Missbrauch)
- Jahrzehntelange Erfahrung in Skandinavien ohne Skandale

Schweden – Studie zu Infektionsgeschehen in Schulen

■ Natürliches Experiment

- 1.) Upper secondary schools:
online
- 2.) Lower secondary school:
offen

■ Registerdaten erlauben

Vergleich von Kindern, Eltern,
LehrerInnen & deren
PartnerInnen aus 1.) versus 2.)
in Bezug auf COVID19 Infektion
und Erkrankung



School closures and SARS-CoV-2. Evidence from Sweden's partial school closure

Jonas Vlasos, Edwin Herrésgård, Helena Svaleryd
doi: <https://doi.org/10.1101/2020.10.13.20211359>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

[Abstract](#) [Full Text](#) [Info-History](#) [Metrics](#) [Preview PDF](#)

Abstract

To reduce the transmission of SARS-CoV-2 most countries closed schools, despite uncertainty if school closures are an effective containment measure. At the onset of the pandemic, Swedish upper secondary schools moved to online instruction while lower secondary school remained open. This allows for a comparison of parents and teachers differently exposed to open and closed schools, but otherwise facing similar conditions. Leveraging rich Swedish register data, we connect all students and teachers in Sweden to their families and study the impact of moving to online instruction on the incidence of SARS-CoV-2 and COVID-19. We find that among parents, exposure to open rather than closed schools resulted in a small increase in PCR-confirmed infections [OR 1.17; CI95 1.03–1.32]. Among lower secondary teachers the infection rate doubled relative to upper secondary teachers [OR 2.01; CI95 1.52–2.67]. This spilled over to the partners of lower secondary teachers who had a higher infection rate than their upper secondary counterparts [OR 1.29; CI95 1.00–1.67]. When analyzing COVID-19 diagnoses from healthcare visits and the incidence of severe health outcomes, results are similar for teachers but weaker for parents and teachers' partners. The results for parents indicate that keeping lower secondary schools open had minor consequences for the overall transmission of SARS-CoV-2 in society. The results for teachers suggest that measures to protect teachers could be considered.