CORONASYS INNOVATION SHEET 15

COVID-19 SIMULATOR

Background

With the start of the cold season people in the northern hemisphere begin to spend more time indoors and case numbers are increasing in many countries[1][2]. At the same time, there are often signs of "corona-fatigue" in many communities, and adhesion to recommended measures and (often non-transparent) hygiene concepts is not always ensured[3]. Austrian researchers have developed a Computer- simulation that aims at protecting people's health while at the same time keeping as much of the economy running as possible[4].

State of information: 10/02/2020

Launch: September 2020

Country: Austria

Focus area: Prevention

Developers:

- pwC in Cooperation with
- Samariterbund
- Austrian Institute of Technology (AIT)

Beneficiaries: people in public buildings

Features

The Covid-19 simulator developed by PwC[5] aims at modeling scenarios for viral spread based on up- to- date medical findings and crowd- simulations and displays them in 3D[6]. By using a digital twin of a specific building (e.g. a school) the simulator calculates the risk of Covid-19 transmission and compares different measures for infection protection. It then calculates the best possible mix of measures to protect people in this specific building[7]. The Simulator is now used in a project in cooperation with the Samariterbund[8], the Austrian Institute of Technology (AIT)[9] , and the Initiative „innovate4vienna" in order to improve infection control in different buildings over the course of the next months.

Potentials

The Simulation might be helpful in deciding which measures should be prioritized or amplified. The simulator might help to communicate the basis for decisions in a transparent and comprehensible way. The graphic display might also help to motivate people to comply with the measures identified as most important[10].

Points to consider

Although the innovation has already been used with some success, only time and use in different contexts will tell if and how much the Simulator can contribute to infection control.

Conclusion

The computer simulation might be a helpful tool in adjusting infection control measures and increasing people's support of those measures.

[1] WHO. "WHO Coronavirus Disease (COVID-19) Dashboard," October 2, 2020. https://covid19.who.int.

[2] Johns Hopkins University and Medicine. "COVID-19 Map." Johns Hopkins Coronavirus Resource Center, October 2, 2020. https://coronavirus.jhu.edu/map.html.

[3] Williamson, Harley, Jennifer Boddy, Kristina Murphy, and Patrick O'Leary. "Coronavirus Spike: Why Getting People to Follow Restrictions Is Harder the Second Time Around." The Conversation. Accessed October 2, 2020. http://theconversation.com/coronavirus-spike-why-getting-people-to-follow-restrictions-is-harder-the-second-time-around-141287.

[4] Baumgartner, Christof. "Covid-19 Simulator von PwC Soll Infektionsrisiko in Gebäuden Reduzieren |." Computerwelt.at, October 1, 2020. https://computerwelt.at/news/covid-19-simulator-von-pwc-soll-infektionsrisiko-in-gebaeuden-reduzieren/.

[5] PricewaterhouseCoopers. "How We Are Structured." PwC. Accessed October 2, 2020. https://www.pwc.com/gx/en/about/corporate-governance/network-structure.html.

[6] Vienna Online. "Covid-19: Simulator Soll Ansteckungsrisiko in Gebäuden Berechnen - Coronavirus Wien - VIENNA.AT." Vienna.AT., October 1, 2020. https://www.vienna.at/covid-19-simulator-soll-ansteckungs-risiko-in-gebaeuden-berechnen/6758675.

[7] OTS.at. "Neuer Covid-19 Simulator von PwC minimiert Infektionsrisiko in Gebäuden wie Schulen oder Büros." Accessed October 2, 2020. https://www.ots.at/presseaussendung/OTS_20201001_OTS0047/neuer-covid-19-simulator-von-pwc-minimiert-infektionsrisiko-in-gebaeuden-wie-schulen-oder-bueros-bild.

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[9] AIT, Austrian Institute Of Technology. "Center for Technology Experience - AIT Austrian Institute Of Technology." ait.ac.at. Accessed October 2, 2020. https://www.ait.ac.at/ueber-das-ait/center/center-for-technology-experience/.

[10] Baumgartner, Christof. "Covid-19 Simulator von PwC Soll Infektionsrisiko in Gebäuden Reduzieren |." Computerwelt.at, October 1, 2020. https://computerwelt.at/news/covid-19-simulator-von-pwc-soll-infektionsrisiko-in-gebaeuden-reduzieren/.

Background on Innovation Sheet Series

As part of a real-time evaluation of the SARS CoV 2 pandemic (with focus on epidemiological, medical, economical, societal, technical, and cultural developments in Germany and Armenia) the CoronaSys research team, under the leadership of Prof. Dr. Martin Voss, is conducting a continuous monitoring of developments and medical, technical, and social innovations concerning Covid-19.

Multiple national and international media outlets, research platforms, and scientific and organizational guidelines, briefs, and updates are screened to feed into this outlet. The rationale behind this is to support the projects' network partners in Armenia and Germany with short summaries of key developments and promising innovations that are shaping the global, German, and Armenian outbreak response and recovery.

The aim of these short briefs is to give condensed and structured information on selected innovations emerging out of the conducted horizon scanning. This could be mainstream big-ticket items or fringe subjects that are easily overlooked in the global flood of information. Some innovations will be followed through their evolution in time while others may only appear once. While subjectively selected, the briefs are descriptive in nature and leave analysis and critical interpretation to the reader. Network partners in both countries are invited to provide feedback on their interest areas and suggest particularly relevant topics for the CoronaSys Workshop series.

The CoronaSys Innovation Sheet Series is published by the Academy of the Disaster Research Unit, which is, as a non-profit limited liability company, a spin-off of the Disaster Research Unit at the Free University of Berlin. The series is part of the research project "CoronaSys: Addressing the corona pandemic in Armenia through systemic risk management", sponsored by the German Federal Ministry of Education and Research.

If you have any questions, suggestions, or if you wish to be taken on (or off) the project mailing list for CoronaSys updates, innovation sheets, and workshop invitations, please send a message to Janina Schäfer (schaefer@a-kfs.de). For general project inquiries, you may contact the team lead Sara Merkes (merkes@a-kfs.de) or the project lead Martin Voss (voss@a-kfs.de).

Previous CoronaSys Innovation Sheets

1 “New” Antiviral Face Masks
2 ”Dyphox” Surface Coating
3 MOVES SLC Portable ICU
4 Portable TRI- KLEEN 500UV
5 Convalescent Plasma Therapy
6 ASIC- App
7 BinaxNOW Antigen Test
8 Corona Traffic Light
9 Aproof at Home Antibody Test
10 IVAT Hygiene Tower
11 LY-CoV555 Antibody Treatment
12 4C Mortality Score
13 Regional Corona Prediction Model
14 Computer-designed Mini- Proteins

All previous CoronaSys Innovation Sheets are available online:
http://coronasys.a-kfs.de/category/innovation-stream/

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SPONSORED BY THE
Federal Ministry of Education and Research

Citation: Academy of the Disaster Research Unit (2020): Covid-19 Simulator. CoronaSys Innovation Sheet 15. Berlin: ADRU.

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