Paul Lloyd / CC0

Pandemic Special

- Grasp and Understand -

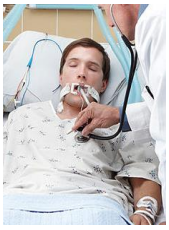
Spread

In spring 2020 in many countries the questions arose: Will the hospitals be able to treat everyone?

In spring 2020 many schools went into their first lockdown. That was only the first of many lockdowns. But how did they come about? In March 2020 many schools were shut down due to the rapid spread of the corona virus. Officials were afraid, that there would be so many seriously ill people at once, that the hospitals would not be able to treat them all. Some teachers did not agree. They were sure, that in any case all could be treated - even without closing schools.

Infobox

At that time, the number of people infected doubled every three days in many countries. It was assumed that about 5%, i.e. one in 20 of those infected would become very seriously ill and would require treatment for about three weeks.



Calleamanecer

Grasp and Understand

But how many people would have gotten seriously ill three weeks later, if the schools had stayed open and there were no contact barriers? You can think about this with an experiment that you might know from math classes: For that you need a chessboard and grains of rice, lentils or something similar.
One grain of rice stands for 1000 demonstrably infected people.

1) Investigate the numbers of infected people before schools were closed in your country and in how many days the number of newly infected people doubled. If schools weren't closed in your country, pick a country of your choice, where schools were closed and do the investigations for that country.
Also investigate how many seriously ill people could have been treated at the same time.
2) You can put one grain of rice on the first square of the chessboard for each thousand infected people at the moment of the school closures.
2) The next sqare on the chessboard stands for the day, where the number of newly infected people would have doubled, if the spread would not have slowed down. So put twice as many grains of rice on the 2nd square.
3) Now put twice as many grains of rice on each additional field as on the previous one. Check how many people would have been infected 21 days later. If you don't want to count the rice grains anymore, print out the chessboard and write the numbers in the fields.
4) If you want to know how many are seriously ill at the same time, divide the result by 20. Would it be enough to treat 5000 seriously ill people?

Author: Anika Weihberger, translated by Hannah Morrison with www.DeepL/Translator (free version)

International Centre for STEM Education (ICSE)
University of Education Freiburg · Kunzenweg 21 · 79117 Freiburg
icse@ph-freiburg.de · www.ph-freiburg.de/icse

Pädagogische Hochschule Freiburg
Université des Sciences de l'Education · University of Education