

SARS-CoV-2

**TRANSLATING SCIENTIFIC KNOWLEDGE TO DECISION MAKERS HAS
CRUCIAL IMPORTANCE IN THE MANAGEMENT OF THE COVID-19
PANDEMIC**



Katalin Gombos, Róbert Herczeg, Bálint Erőss, Sándor Zsolt Kovács, Annamária Uzzoli, Tamás Nagy, Szabolcs Kiss, Zsolt Szakács, Marcell Imrei, Andrea Szentesi, Anikó Nagy, Attila Fábián, Péter Hegyi and Attila Gyenesei, on behalf of the KETLAK consortium

PlosONE, 2020. május 4, under review



2020



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



TRANSLATIONAL
MEDICINE



Alapítvány | Központok | Munkacsoportok | Metaanalízis |
Koronavírus (SARS-CoV-2) | Gasztroenterológia | Kardiológia



Koronavírus (SARS-CoV-2)

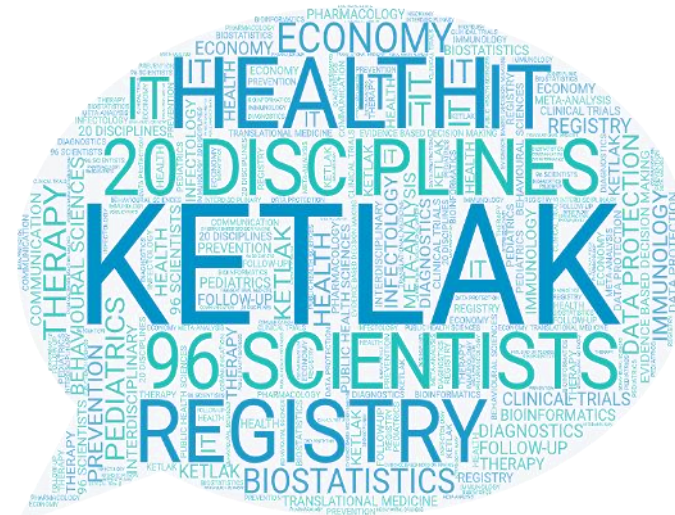


KORONAVÍRUS
ELLENI TRANZLÁCIÓS
LAKOSSÁGTÁMOGATÓ
AKCIÓ- ÉS KUTATÓCSOPORT



Heim Pál 
Országos
Gyermekgyógyászati
Intézet

Around 100 scientists



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



Alapítvány | Központok | Munkacsoportok | Metaanalízis |
Koronavírus (SARS-CoV-2) | Gasztroenterológia | Kardiológia



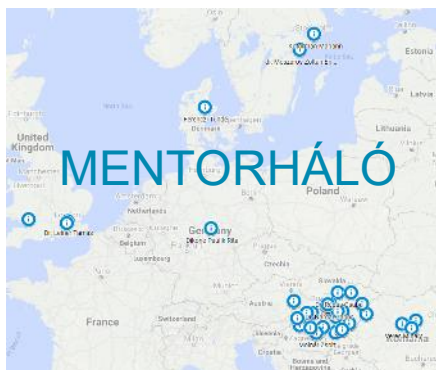
Koronavírus (SARS-CoV-2)



KORONAVÍRUS
ELLENI TRANZLÁCIÓS
LAKOSSÁGTÁMOGATÓ
AKCIÓ- ÉS KUTATÓCSOPORT



Intenzív Tudományok Online - Mindenkinék (ITO-M)



1000 ONLINE 6500 OFFLINE

TRANSLATIONAL MEDICINE

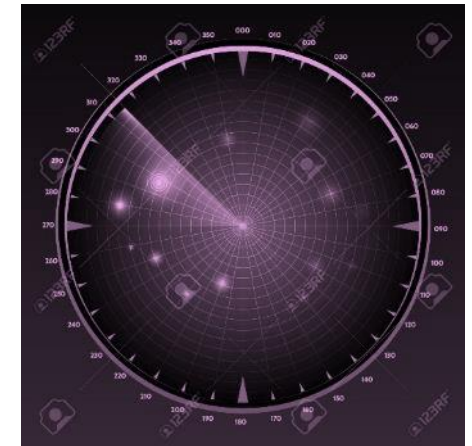
taking discoveries for patients benefits



A screenshot of a website page for Translational Medicine (TM). The page has a white background with a blue and red sidebar. The main content area is purple and white. At the top, there is a logo with the text 'TM a jobb betegellátásért'. Below that, there is a navigation menu with links for 'Alapítvány', 'Központok', 'Munkacsoportok', and 'Metaanalízis'. The 'Metaanalízis' link is highlighted. Below the navigation, there is a section titled 'Metaanalízis készítés' with a sub-section for 'Koronavírus (SARS-CoV-2)'. Below this, there is a large image of a coronavirus particle. At the bottom, the text 'Koronavírus (SARS-CoV-2)' is displayed.

11 MAY 2020, 14:58

10 750



RADAR
PROJECT

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



CORON-APP



Home quarantine

SEARCH-COVID-19



General Hospital



Intensive

Hospital

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



Egyénre szabott életmódi tanácsadás a COVID-19-cel szemben:
Adaptív randomizált kontrollált klinikai vizsgálat



06 80 442 642

Internattional registration – ClinTrial.gov NCT04321928

Prestudy protocol publication – BMJ Open

Sample size calculation

Ethical Approval

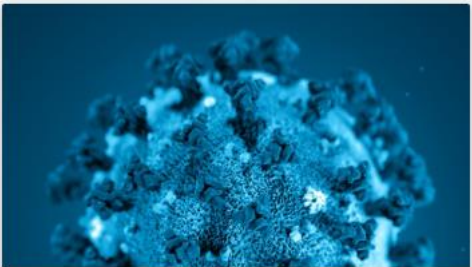
Modified ethical approval

Legalisation amendment

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

Alapítvány | Központok | Munkacsoportok | Metaanalízis |
Koronavírus (SARS-CoV-2) | Gasztroenterológia | Kardiológia



Koronavírus (SARS-CoV-2)

Decision
Making
Support

Intenzív Terápiás Mentorközösség
lélegeztetett betegek ellátásában

Aferézis központosított gondolatok

A PTE Transzlációs Medicina Kutatóközpontjának kutatói


TUDOMÁNYOS FELADATAINK

- a COVID-19 lélegeztetésénél az **aneszteziológiai** ismeretekkel kapcsolatos kutatások
- egységes gyakorlati megvalósítás

feladat felvétele:

TUDOMÁNYOS

- A gyógyult emberek antitesteket, amelyek



KETLAK
KORONAVÍRUS ELLENI TRANZLÁCIÓS
LAKOSSÁGTÁMOGATÓ AKCIÓ- ÉS KUTATÓCSOPORT

KLINIKAI VIZSGÁLAT
16 SZAKTERÜLET

Milyen a COVID-19 szűrések lebonyolítására a biztonságos feloldására

Milyen alapuló kezelések előtérbe helyezése COVID-19 ellátására – RADAR projekt

Felvetődő predikciós és terápiás kérdések COVID-19

#7

Milyen evidencia szól a NaCl felhasználása mellett a COVID19 kezelésében?

Milyen evidencia szól a mellkasi UH használata mellett a COVID19 kezelésében?

Szervezők: Dömötör Réka Zsuzsa, Juhász Márk Félix, Ocskay, Klementina

Szakmai Felelősök: Kiss Szabolcs, Erőss Bálint

Felelős Vezető:

Hegyí Péter

Elérhetőség:

+36703751031, hegyi2009@gmail.com

Munkacsoport tagjai:

<https://tm-centre.org/hu/munkacsoportok/ketlak-hu/>

2020. április 2.

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



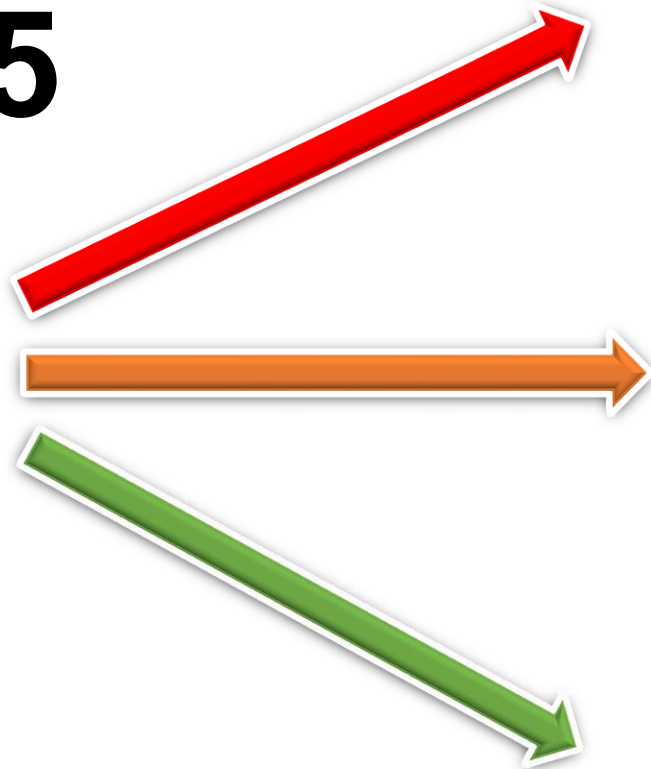
TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



SARS-CoV-2
 $R_0=2.5$

R



1.7 above

Exponential or Linear increase

1.0

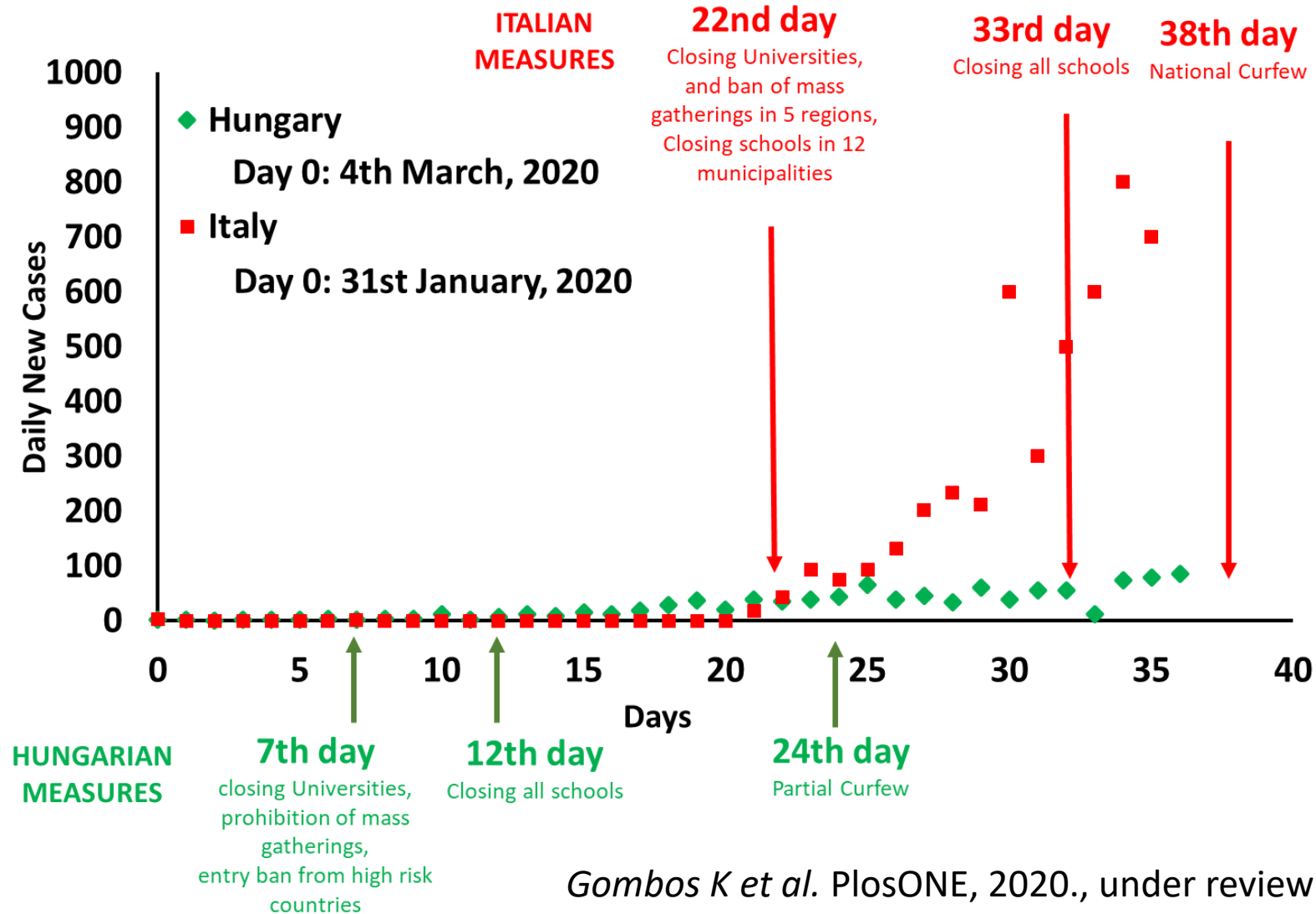
Stagnant

1.0 below

Linear decrease

TRANSLATIONAL MEDICINE

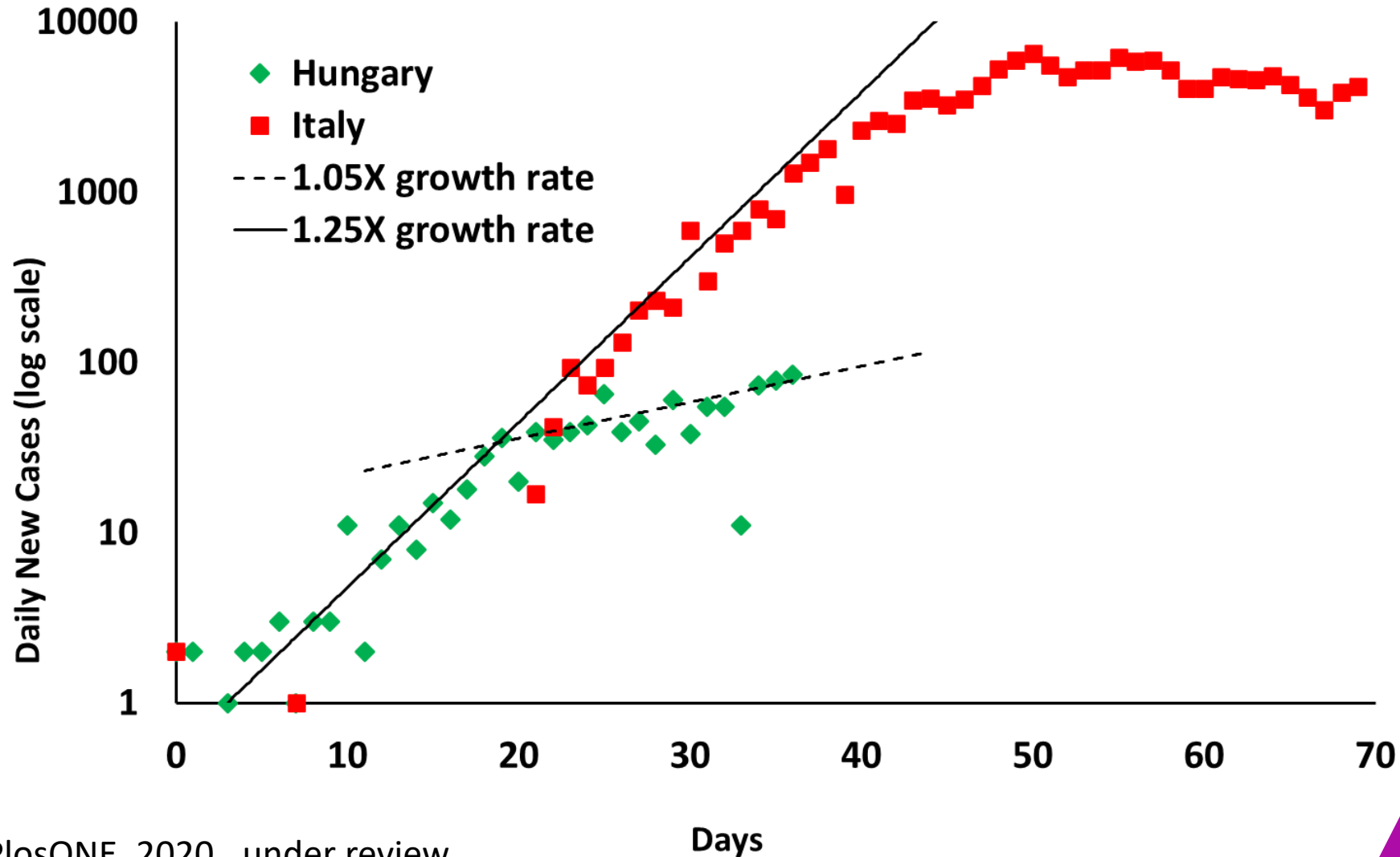
taking discoveries for patients benefits



Gombos K et al. PlosONE, 2020., under review

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

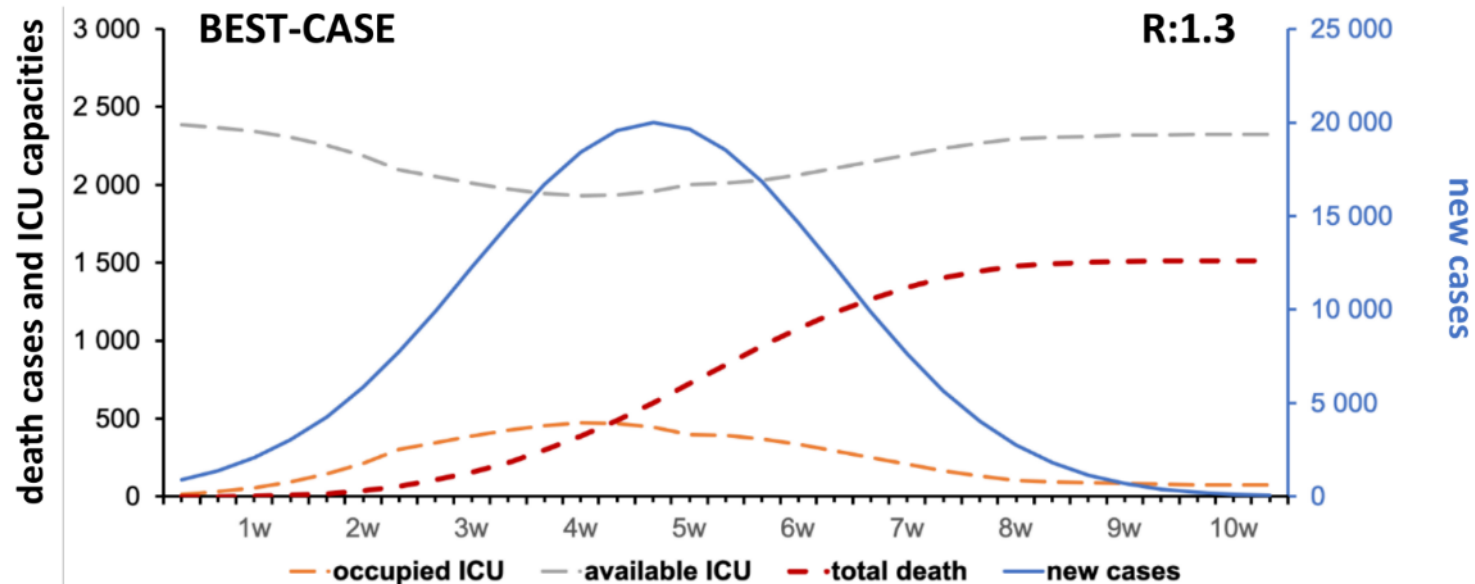


ICU capacity

	Bed capacity	certified nurse specialist	Ratio (beds/nurse)
1 st of January:	1,000	1 st of January: 2,000	1.6
8 st of April:	2,000	8 st of April: 2,000	3
Media News:	8,000	8 st of April: 2,000	6

Calculating ICU capacity above 3,000 is not realistic

MORTALITY SCENARIOS

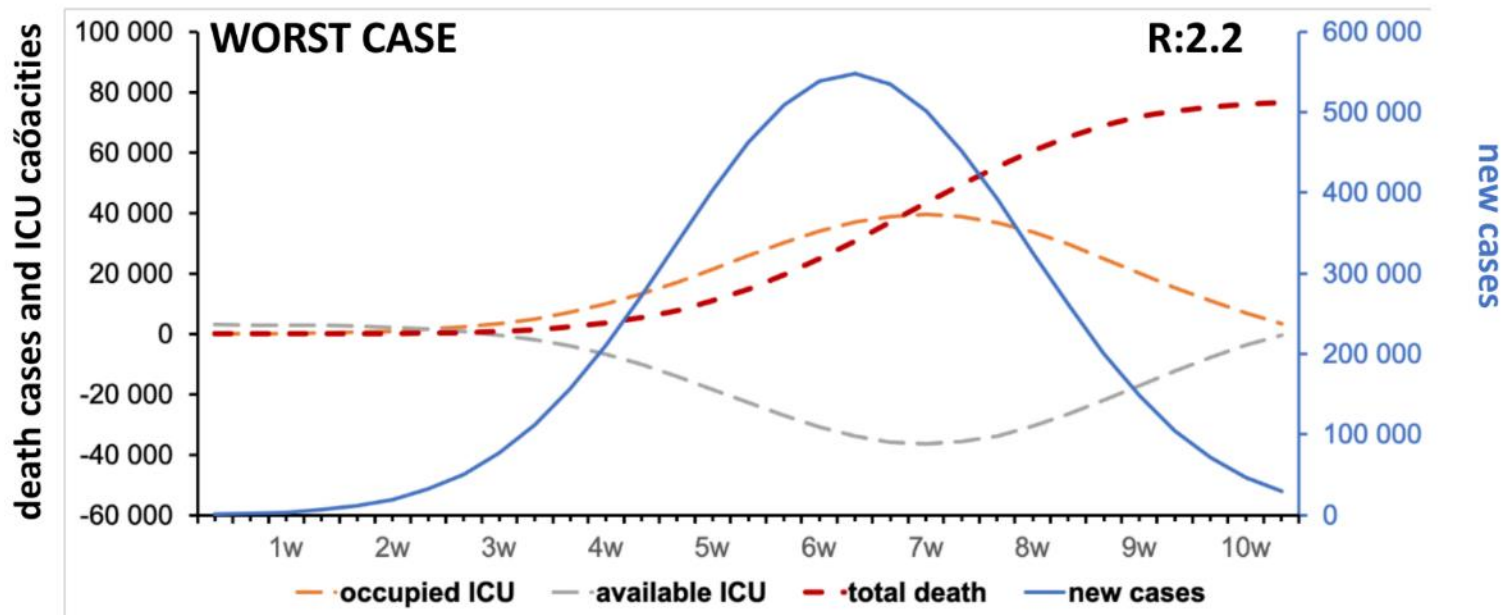


TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



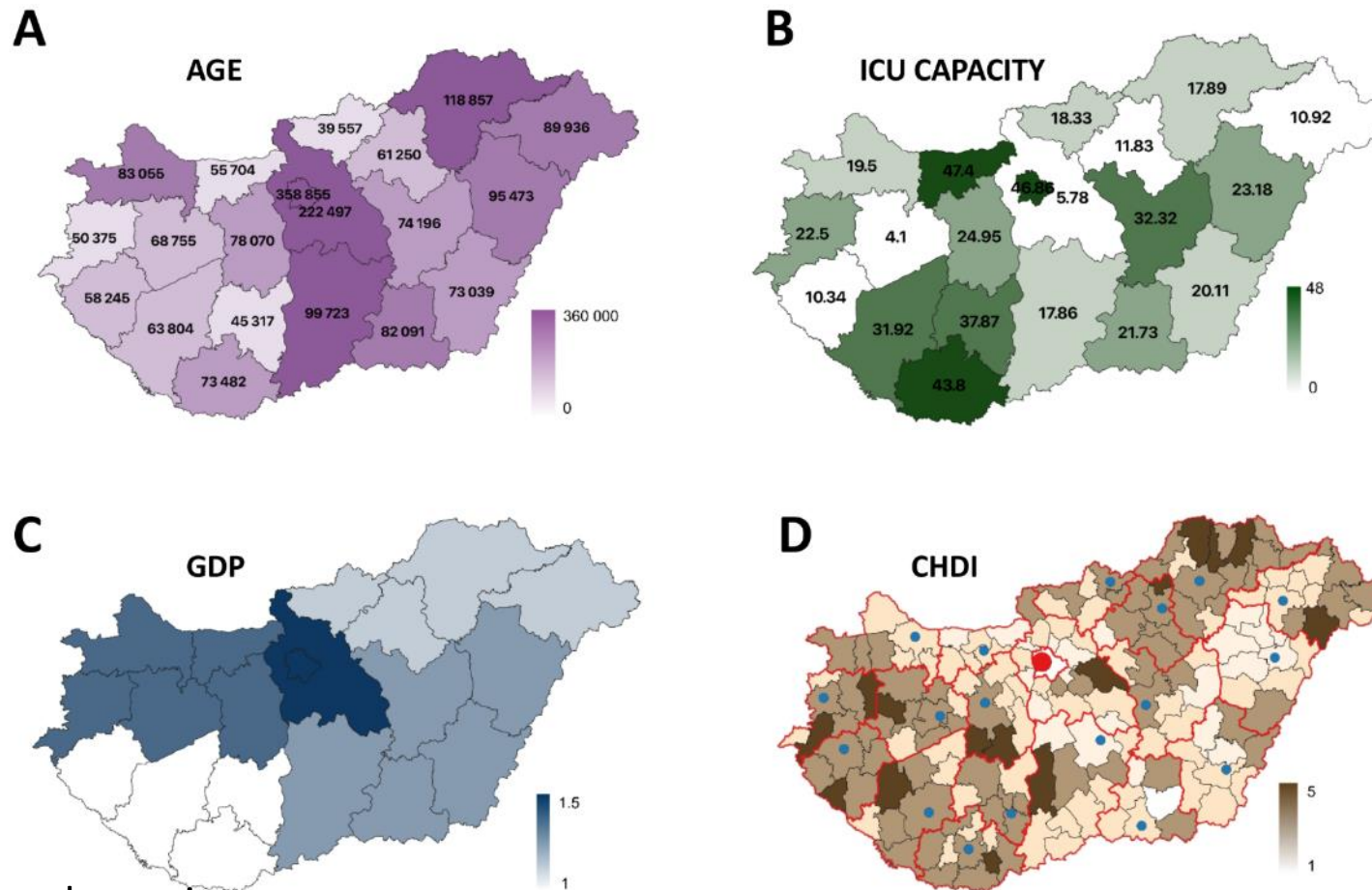
MORTALITY SCENARIOS



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

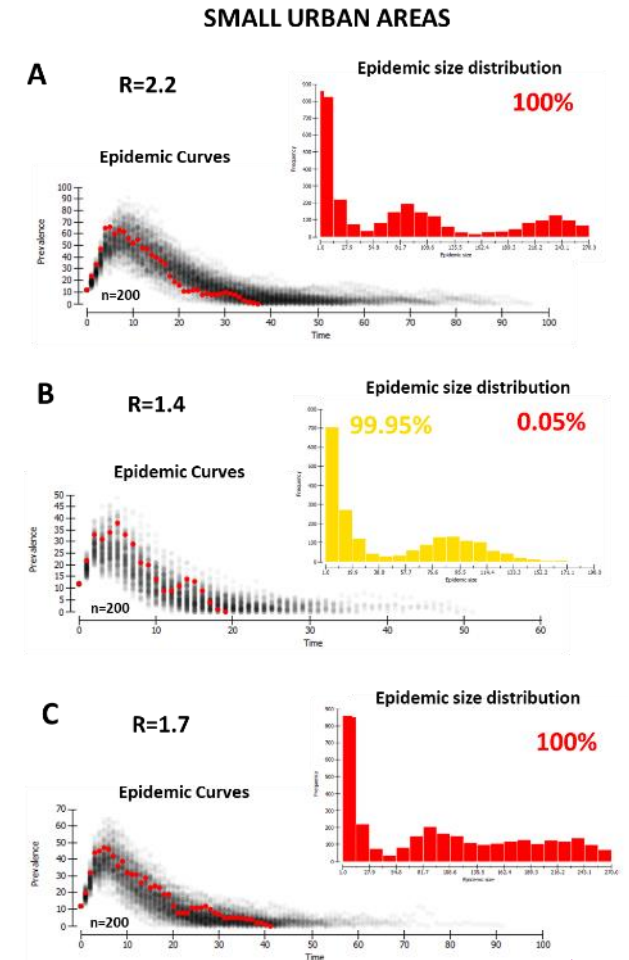
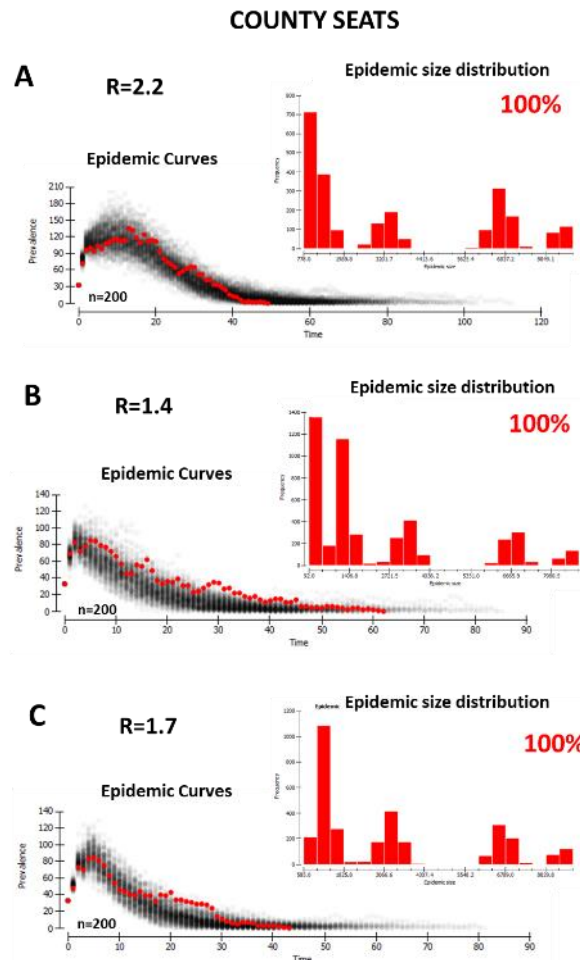
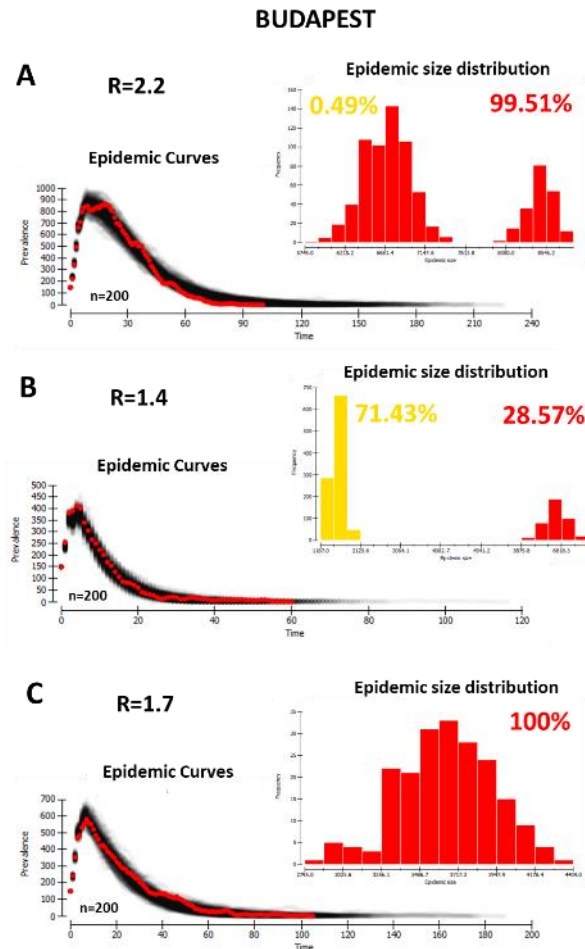
REGIONAL DIFFERENCES



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

THE IMPACT OF CLOSING AND REOPENING ELEMENTARY SCHOOLS



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



9 th APRIL 2020	IDENTIFIED PROBLEMS
1	The free intensive bed capacity is very low. There are unmet needs for new equipment and education in the intensive care system.
2	The number of measurements is extremely low. Without measurements, it is not possible to judge the activity of the epidemic, to isolate the infectious persons, or to slow down the epidemic substantially.
3	The regions show great differences economically, socially, and healthily. The combined lifting of the austerity measures could have an economically beneficial effect, but there are more than 100,000 deaths are expected in the event of rapid collapse of the capacity of health care.

TRANSLATIONAL MEDICINE

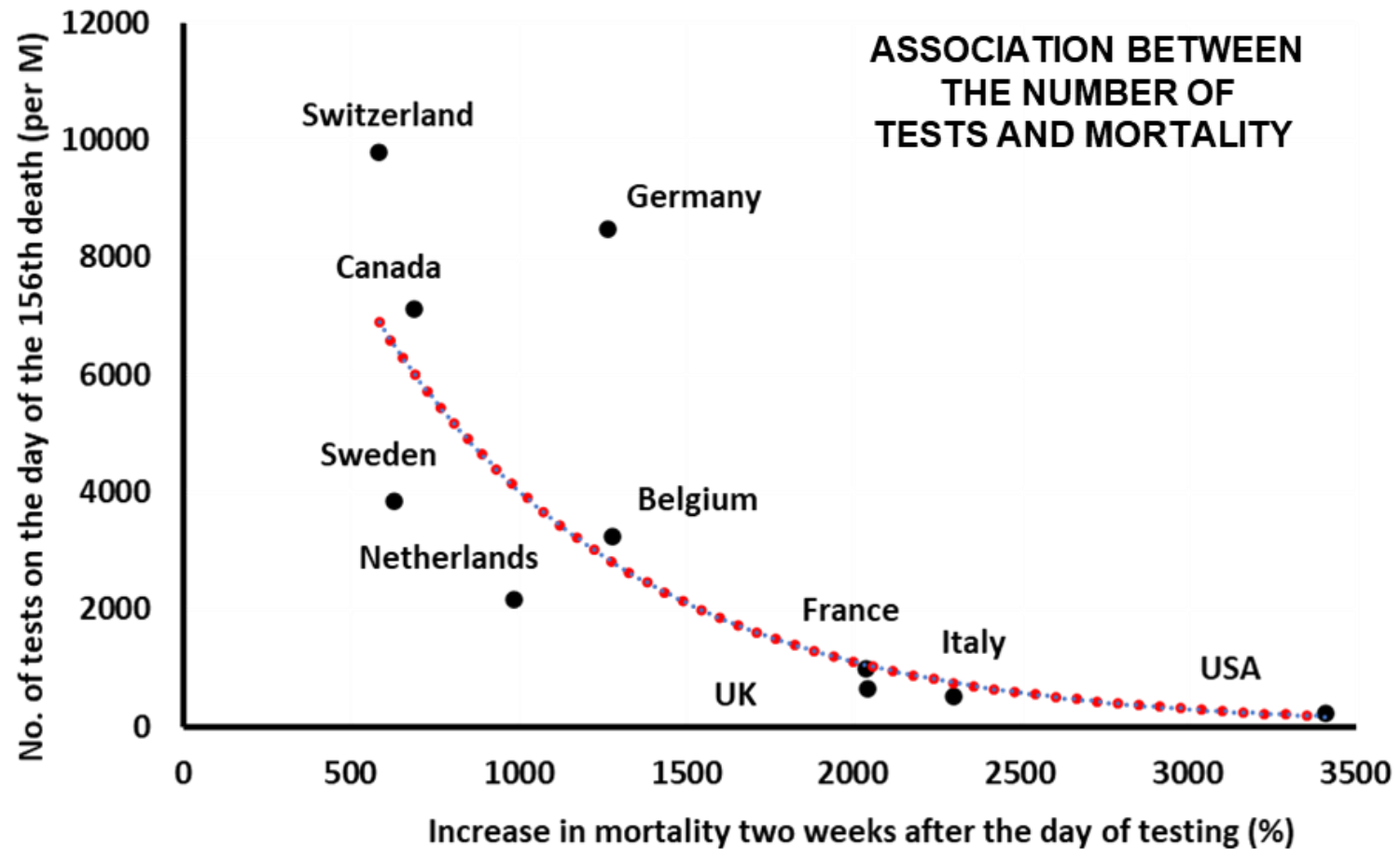
taking discoveries for patients benefits



9 th APRIL 2020	SUGGESTED SOLUTIONS
1	Multiple and concentrated expansion of health care capacities is crucially needed. The number of ventilators is not equal to the capacity of the intensive care unit (mass and immediate medical and nursing training is required). The KETLAK consortium immediately started a WEBINAR in which more than 7,000 attendees have already educated.
2	A paradigm shift is needed in the testing strategy. It will be a crucial determinant of where the number of deaths stops between 5,000 and 100,000.
3	A paradigm shift is needed with the introduction of a regional strategy. Regional care organization and data analysis can effectively support decision-making, significantly reducing the burden on the healthcare system and the number of deaths.
4	Lifting of restrictions during the Easter holidays would have serious, irreversible consequences; therefore, the restrictions should not be ended.
5	Controlled release of the restrictions in the regions with the best GDP indicators could lead to early economic and social benefits.

TRANSLATIONAL MEDICINE

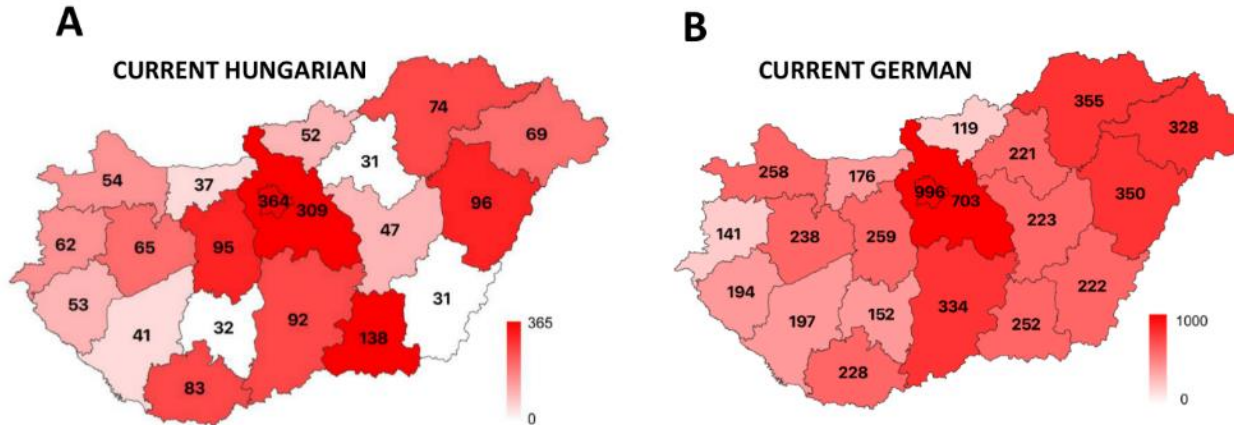
taking discoveries for patients benefits



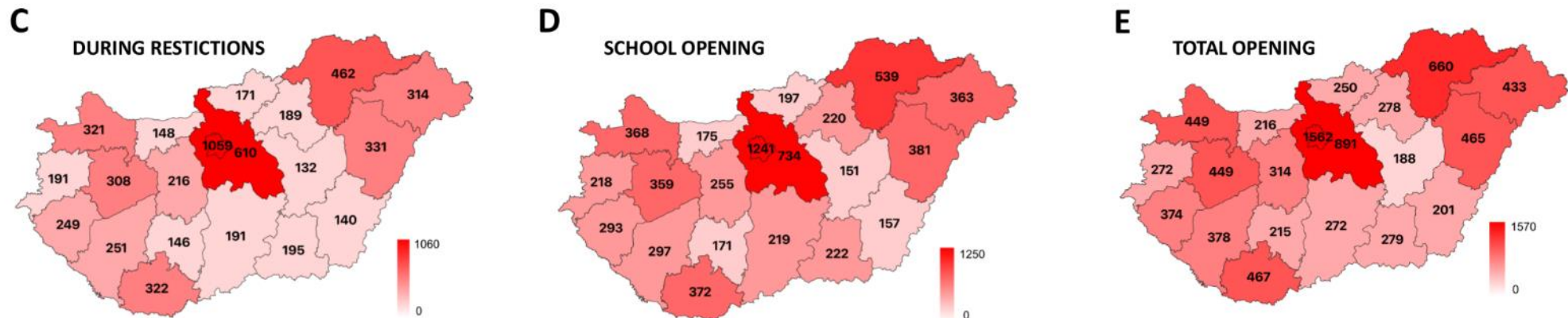
TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

CURRENT TESTING IN HUNGARY AND IN GERMANY



SUGGESTED TESTING IN HUNGARY CALCULATED FROM THE GERMAN TESTING NUMBER MODIFIED BY THE HUNGARIAN ICU CAPACITY, GDP AND CHDI



19 th APRIL 2020	IDENTIFIED PROBLEMS
1	There is a lack of a unified national testing network that can continuously provide the tests needed to control the epidemic.
2	The regional pattern of Hungary shows considerable differences in the economy, society and health care, therefore uniformly lifting of restrictions cannot lead to uniform results.

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



19 th APRIL 2020	SUGGESTED SOLUTIONS
1	The paradigm shift is essential in the testing strategy. It will be the decisive determinant of the overall number of deaths in Hungary.
2	Establishment of a measurement network that provides the required number of measurements, which network uses uniform, controlled measurement principles is highly recommended.
3	The establishment of a background analysis team to help assess the situation of the epidemic is vitally important. This team should include the necessary multidisciplinary disciplines, including health professionals, epidemiologists, mathematicians, biostatisticians, informatics, immunologists, clinical microbiologists, intensive care professionals, behavioural, social, economic and regional experts, as well as data protection professionals;
4	Despite the dangers in health care, the step by step and controlled relaunch of society is essential with a thoughtful reduction in restrictions and with the establishment of protective rules with the significant. elevation of testing capacities.,

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

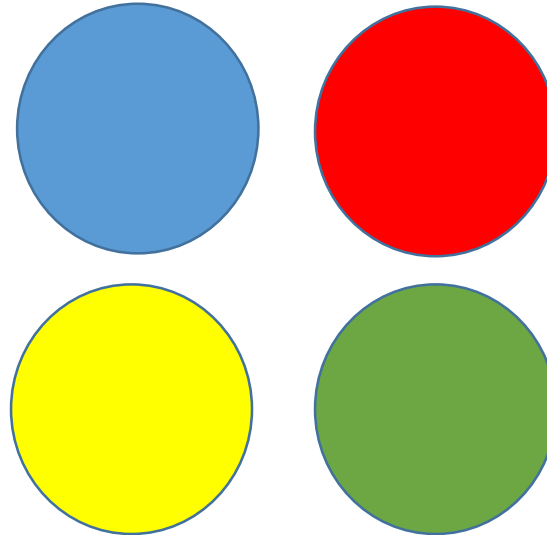


HOW TO REDUCE THE R VALUE?

PROTECTION



DECREASE CONTACT NUMBERS



SCREENING



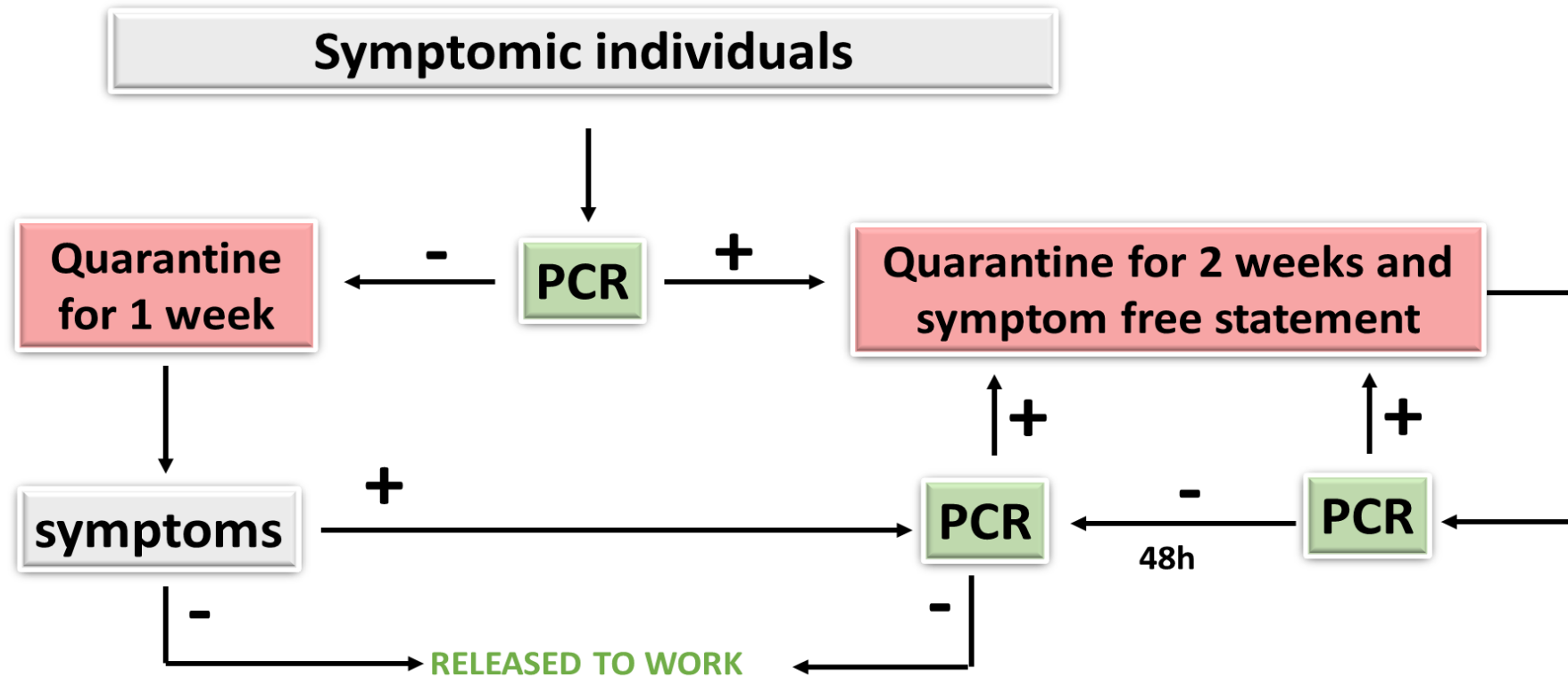
TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



HOW TO REDUCE THE R VALUE?

TESTING



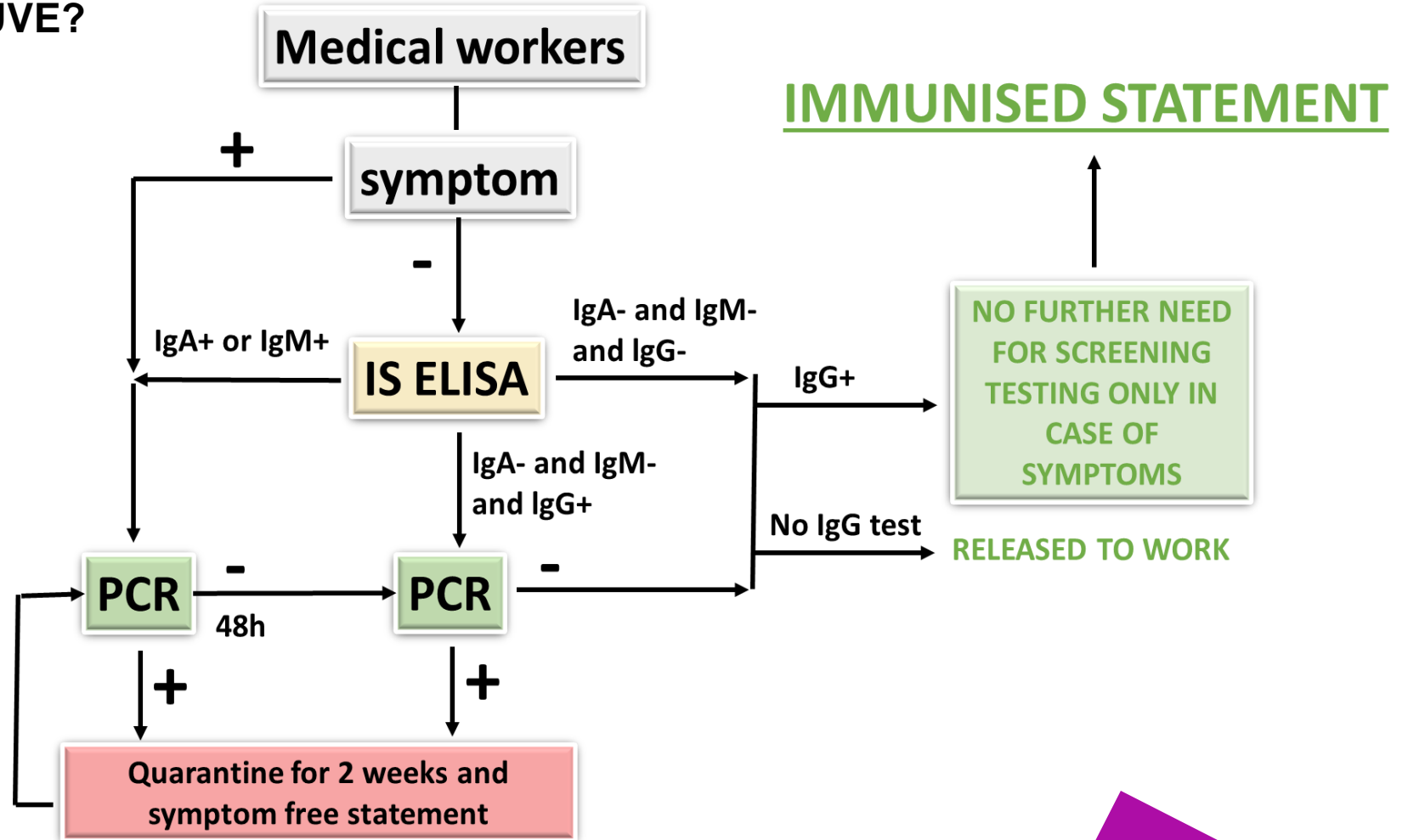
TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



HOW TO REDUCE THE R VALUE?

SCREENING AND TESTING



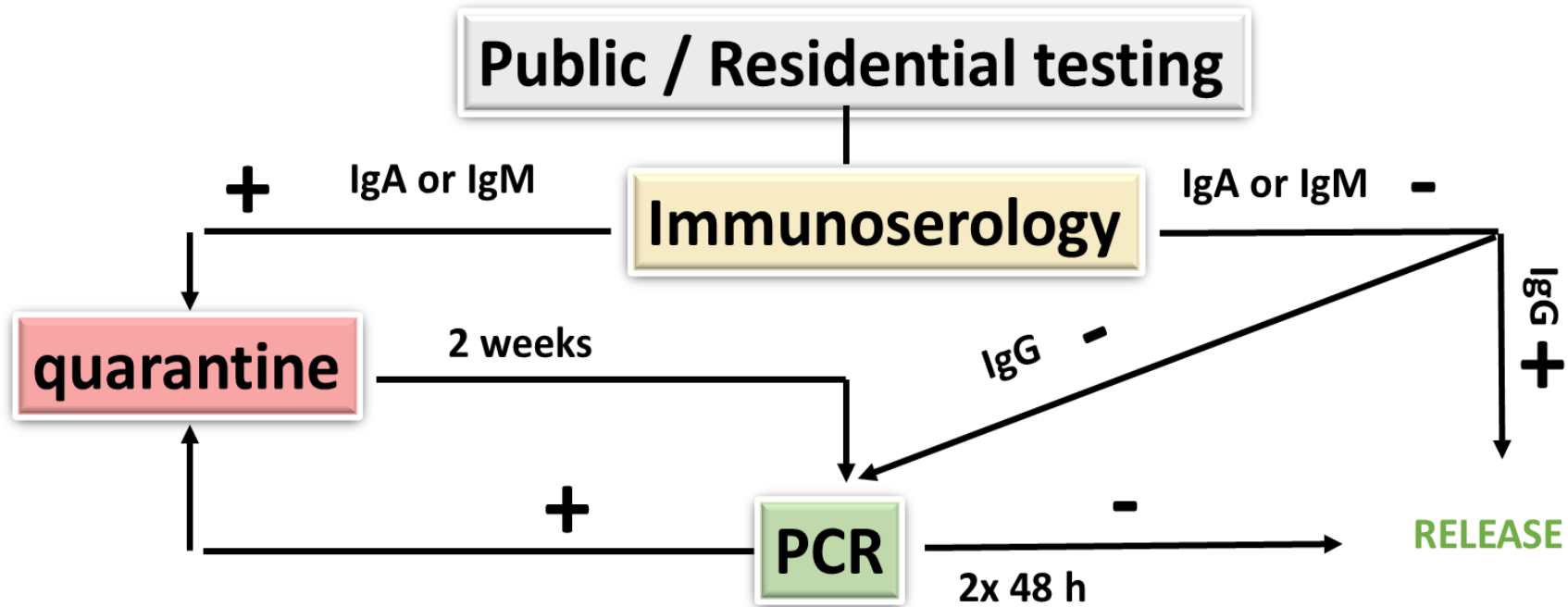
TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



HOW TO REDUCE THE R VALUE?

SCREENING

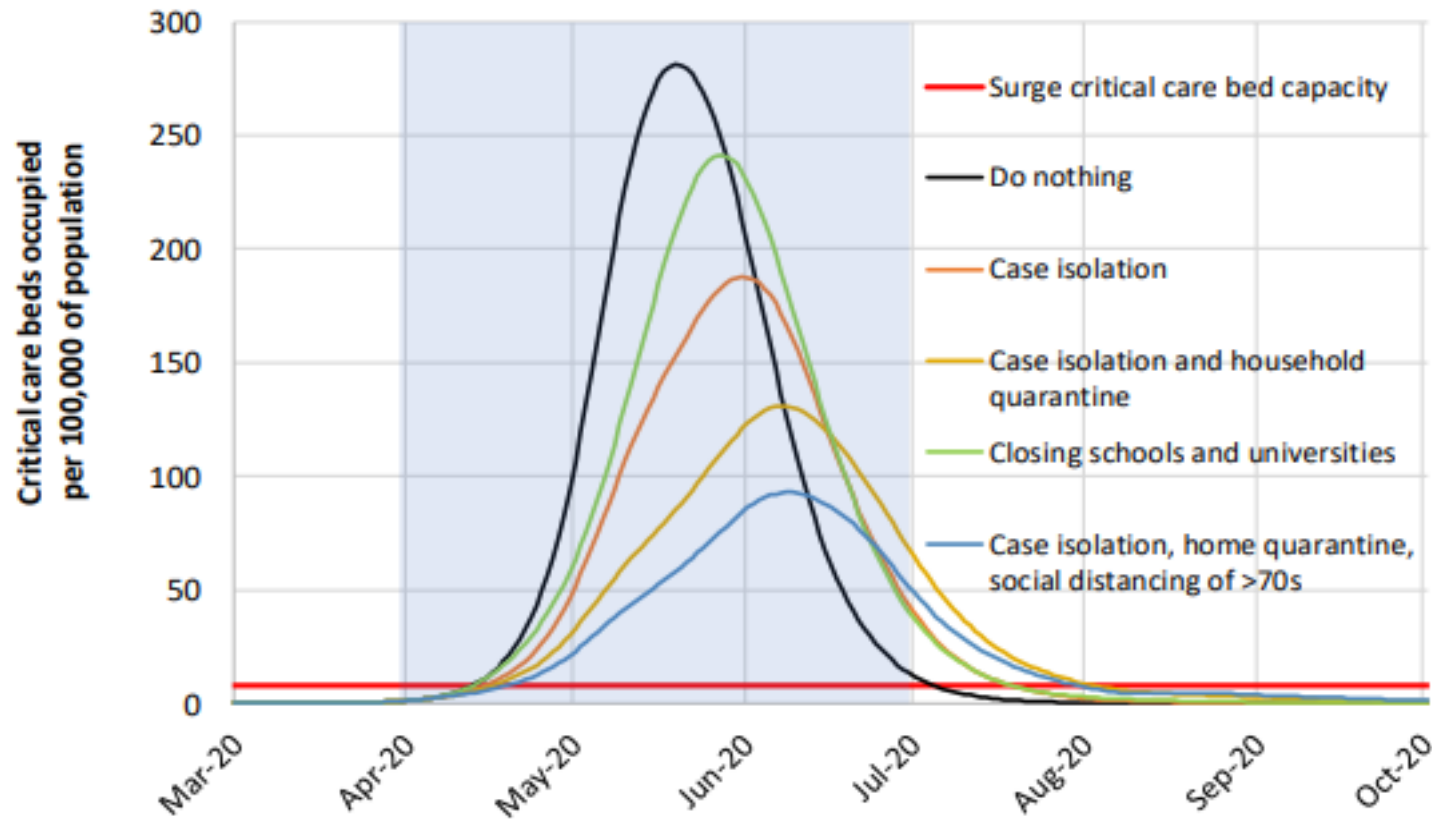


TRANSLATIONAL MEDICINE

taking discoveries for patients benefits

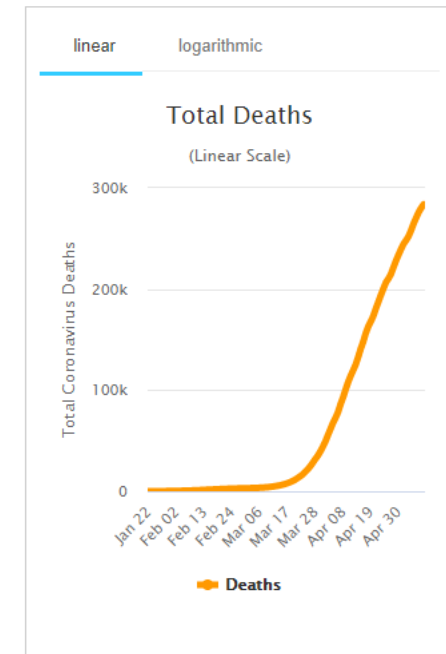
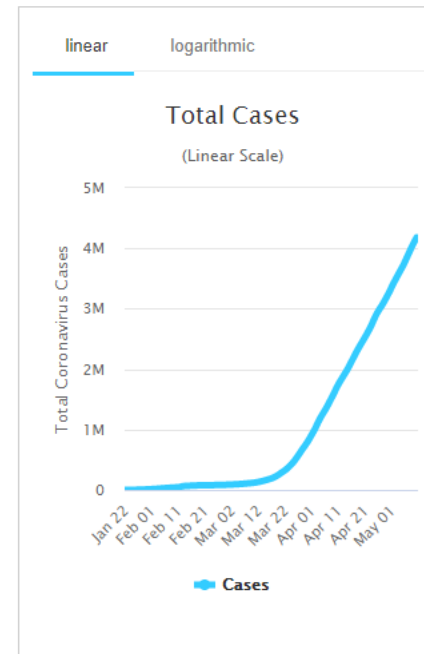
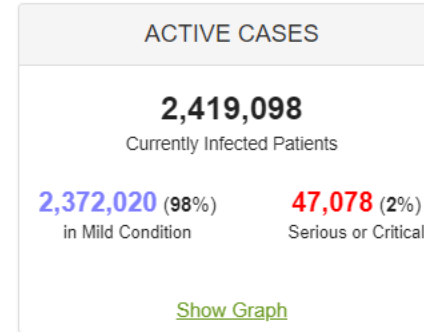
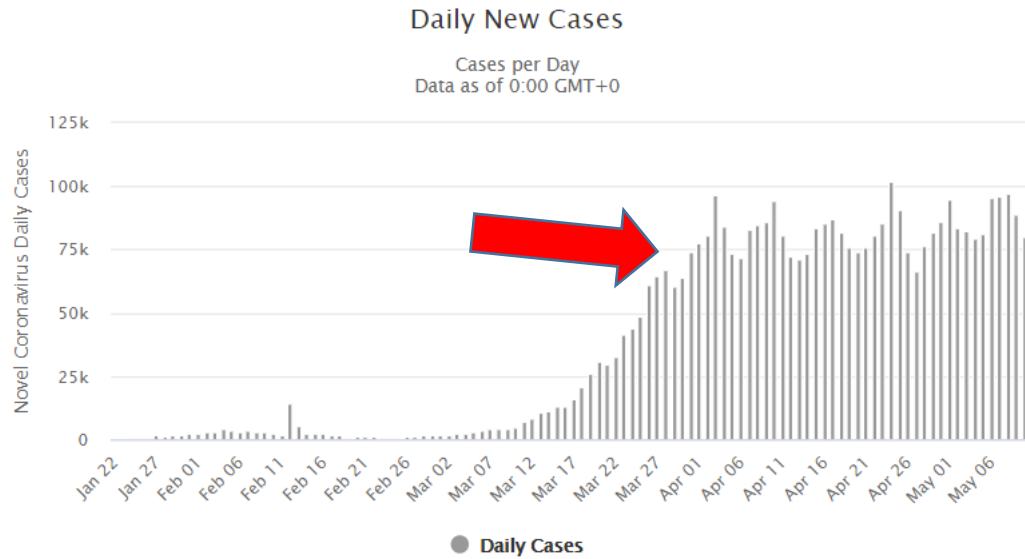


Source: Ferguson et al. Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



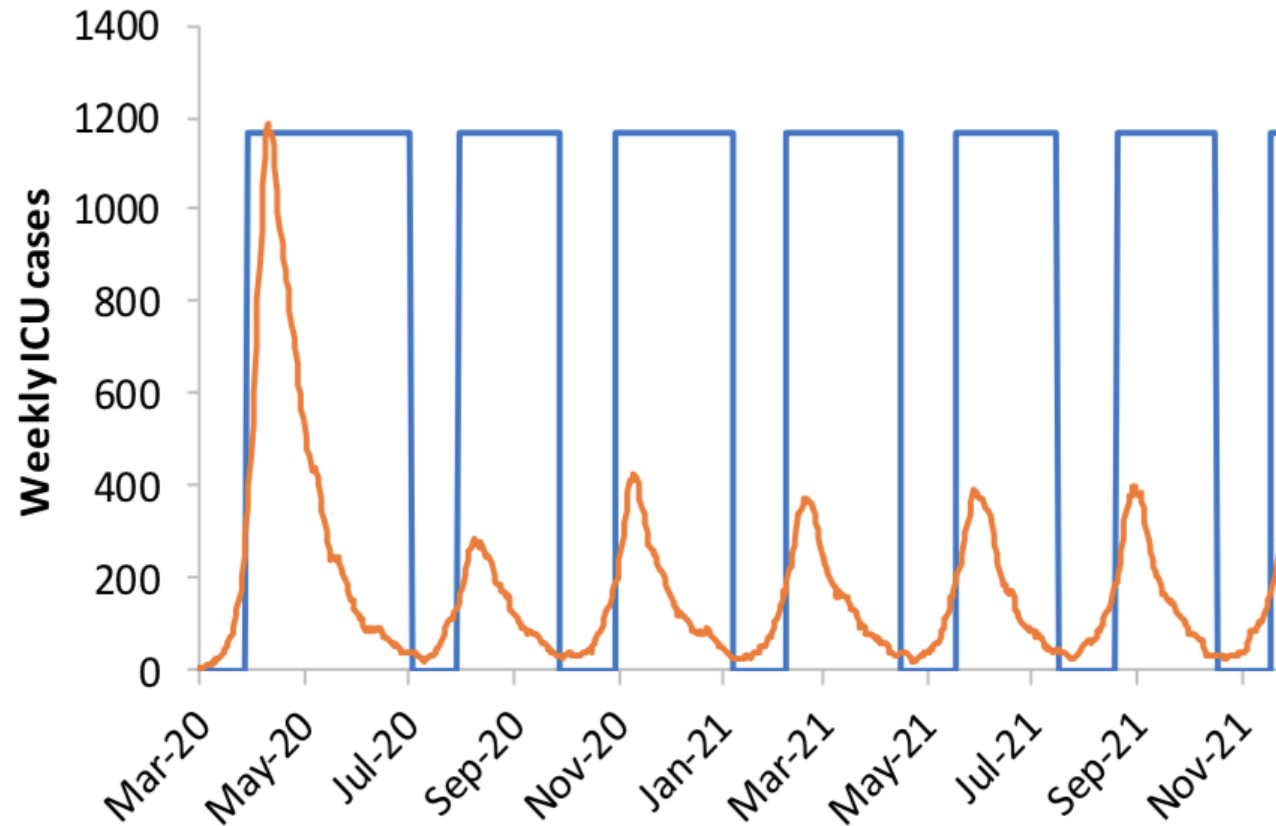
Source: <https://www.worldometers.info/coronavirus/>

TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



Source: Ferguson et al. Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand



TRANSLATIONAL MEDICINE

taking discoveries for patients benefits



Thank you for your attention!



p.hegyi@tm-centre.org



2020

